

OECD Directorate for  
Science, Technology and Industry (STI)



## Entrepreneurship Review of **Denmark**



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## EXECUTIVE SUMMARY

1. The Danish economy is small, open and dynamic with a large number of small and medium-sized enterprises. Start-up rates in Denmark have increased steadily in recent years and are high in international comparison. The overall importance of high growth firms is increasing but remains below the level of some other countries. This has stimulated the Danish government to put forward ambitious objectives for entrepreneurship in general and high growth start-ups specifically in the *Globalisation Strategy* in 2006. Accordingly the funds and infrastructure available for the support of young enterprises with high growth potential has increased substantially.

2. In the past, entrepreneurship policy in Denmark has aimed at creating favourable framework conditions for entrepreneurship for all firms. Since early 2000, Denmark has adopted a wide range of programmes promoting entrepreneurship, easing access to finance, providing entrepreneurship education, improving access to counselling, technology transfer and internationalisation. Entrepreneurship policy shows a large comprehensiveness and is regularly monitored by benchmarking entrepreneurial performance and determinants internationally. A continuous assessment of the entrepreneurship performance of Denmark has been very beneficial as (policy) entrepreneurship trends in other countries could be monitored and existing Danish entrepreneurship policies could be adapted to the changing character of the global economy.

3. Overall entrepreneurship policy in Denmark can be evaluated as positive, having resulted in a healthy business environment and very conducive to entrepreneurial activity. Administrative burdens for entrepreneurship in Denmark are very low as Denmark has been more successful than many countries in keeping regulatory and administrative requirements to a reasonable minimum. And the supply to financial resources for entrepreneurial firms is overall favourable in Denmark. The Danish venture capital market has grown steadily in recent years and the concentration and professionalisation of activities in the *Vækstfonden* has resulted in a larger transparency for companies.

4. This does not mean that there is no room for improvement in effective entrepreneurship policies in Denmark, especially in the light of the ambitious objectives set out by the *Globalisation Strategy*. The focus on high growth entrepreneurship might call for new/adapted policies and instruments. It is clear that the success of this more focused approach in entrepreneurship policy will directly depend on the good identification of growth entrepreneurs. It should be taken into account however that a definition based on firm age may risk targeting too small a group of high-potential entrepreneurial firms.

5. The major area where the framework conditions in Denmark work against entrepreneurial activity is the impact of high and progressive taxation on risk/reward trade-offs that influence incentives. High marginal tax rates affect both successful entrepreneurs and the skilled people who make crucial contributions in supporting, and often salaried, positions. There are probably limits to what can be done given the rather strong public support but measures to mitigate the disincentives generated by high taxation would be helpful.

6. The issue of taxation is also particularly important given its influence on the international mobility of talented and highly skilled people who often have options readily available elsewhere. Denmark is a small part of an open and increasingly integrated international economy, so such people are likely to include both Danish citizens and people who must be attracted from other countries. This category of human capital is especially important in developed countries like Denmark as the growth potential of firms is directly related to the innovativeness and internationalisation of their activities. The ability to

attract and retain skilled human resources is an important element of making Denmark a more entrepreneur-friendly base of operations.

7. A second priority area for entrepreneurship policy in Denmark is entrepreneurship education on the different levels of the education system. Denmark performs comparatively less well in the supply of entrepreneurial skills and capabilities, entrepreneurship receiving less attention in the Danish education system relative to the top performing countries. This means that there is still scope to improve the training of potential entrepreneurs and the cultural attitude towards entrepreneurship. Different initiatives have been launched in recent years; some first indications of increased attention to entrepreneurship in education already become apparent. It seems that there is a need for continuation of programs in this domain; a thorough evaluation is warranted on the induced effects of policy programs in the future.

8. In addition, some conditions for entrepreneurship could be further improved: the venture capital markets remains relatively small and is heavily dependent on government funds especially in pre-seed and seed investments, the transfer of technology between the research and the business sector is relatively limited and some administrative requirements may undergo further policy evaluation.

9. An important challenge for Denmark is the coordination and integration of different policies affecting entrepreneurship. Just like in other countries, the wide range of programs impacting entrepreneurship in Denmark illustrates the shared responsibilities of different ministries on entrepreneurship. The *Globalisation Strategy* has put forward objectives in different policy domains acknowledging the mutual interdependence of policy sub-domains like education, entrepreneurship and innovation. In a context of low unemployment, the focus on high growth start-ups which are more productive and innovative calls for a clear coherence especially between innovation and entrepreneurship policies. Therefore it is both positive and noteworthy that strong efforts have been undertaken from the relevant ministries to ensure co-ordination and a clear division of labour.

10. Denmark may face potential bottlenecks linked to the multi-level governance dimension of entrepreneurship policies. The 2007 local government reform has allowed the Danish government to re-think the Danish business support infrastructure. As regards the provision of business services, the reform has resulted in more differentiated advice, with basic business services being provided by municipalities, while the newly created regional Centres of Growth service growth-oriented businesses. There is a risk that the recently de-concentrated structures (Regional Centres of Growth) may territorially overlap with the role played by sub-national governments.

11. The case study on the multi-level government coordination in metropolitan Copenhagen shows that the objectives of the Business Link Greater Copenhagen Area and the Business Centre at the municipal level (City of Copenhagen) are potentially conflicting. While the new business service structure is too recent to evaluate, the case study on Copenhagen shows that additional actions might have to be taken in order to realise the effective coordination between the different levels of government. This calls for increased coordination between the different levels of government in the implementation of entrepreneurship policies and programs. Co-ordination is also needed between the municipalities delivering basic services to enterprises and the Centres of Growth to optimise task-sharing between these two levels of delivery.

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## INTRODUCTION

12. There is a growing recognition that entrepreneurship is an important driver of economic growth, productivity and employment. The entry and exit of companies, the growth of existing companies (*e.g.* gazelles) are crucial for the industrial dynamics of countries and regions, as new innovative firms replace older firms and result in a creative destruction process of the economy. Accordingly policy makers have taken numerous measures to test the potential of entrepreneurship policy on innovation and productivity growth.

13. The economic context in which entrepreneurship is promoted is however essential, since firm creation and expansion operates in both a national and an international business context. For a small open economy like Denmark in particular, entrepreneurship and innovation have to be analysed from an international/global perspective, given the increasing importance of global value chains and global innovation networks. This review of entrepreneurship benchmarks Denmark internationally, presenting the different determinants and assessing the effectiveness and governance of entrepreneurship policies. It analyses how current entrepreneurship policies contribute to enhanced innovation in the context of the *Globalisation Strategy* set out recently by the Danish government.

14. A second objective of the review is to analyse the governance aspect of entrepreneurship policies in Denmark. Following the local government reform, responsibilities for entrepreneurship policies have been restructured in Denmark, particularly in the provision of business service. The review sheds light on the division of labor between different ministries and agencies as well as across the different levels of government; it identifies (potential) problems and does recommendations for a better functioning.

15. Entrepreneurship is interpreted very broadly in this report, covering all entrepreneurial activities in the pursuit of the generation of value through the creation or expansion of economic activity, by identifying and exploiting new products, processes or market (OECD – Eurostat Entrepreneurship Indicator Program). The report has tried to present empirical evidence on the multifaceted nature of entrepreneurship; data come from a large diversity of sources (including OECD and Danish sources) and are therefore not always completely comparable.

16. Chapter 1 presents entrepreneurship and the Danish business structure at a national and regional level. It discusses the structural characteristics of the Danish economy in terms of international orientation, specialisation and innovation. Entrepreneurship in Denmark is benchmarked with other countries and the need for high growth firms is raised.

17. Chapter 2 discusses the framework conditions for entrepreneurship in Denmark based on a conceptual framework of the determinants and conditions for entrepreneurship. Access to finance, entrepreneurial capabilities, access to R&D and technology, the regulatory environment and entrepreneurial culture are assessed.

18. Chapter 3 describes the main policy initiatives in the area of entrepreneurship with a focus on the links between entrepreneurship, innovation and *globalisation*. The chapter also presents the different actors involved in the implementation of policies and programs.

19. Chapter 4 focuses specifically on the division of labor of entrepreneurship policies across the national, regional and local levels. The review assesses the effectiveness of the current organisation of entrepreneurship policies in Denmark, discussing the opportunities, problems and challenges linked to a multi-level governance system.

20. Chapter 5 assesses entrepreneurship in Denmark based on the findings of the four first chapters, paving the way for policy recommendations on how to foster entrepreneurship further. Advantages and disadvantages of current entrepreneurship policies and their implementation across different levels are identified in order to optimise the contribution of entrepreneurship to goals Denmark set itself in the Globalisation Strategy.



## CHAPTER 1: ENTREPRENEURSHIP IN DENMARK

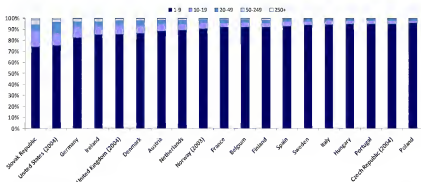
This chapter discusses the importance and the role of entrepreneurship in the Danish economy. In a first stage the structure of the Danish firm population and the main industry sectors are described, in relation to their international openness and innovation capacity since the structural characteristics directly determine the room for entrepreneurship. At a second stage, entrepreneurship itself is discussed in more detail by analysing start-up and growth trajectories in the light of the objectives set by the Danish government in the domain of entrepreneurship.

### 1. Main features of the business sector in Denmark

#### 1.1. Structure of the firm population

1.1 The Danish economy is a small and open economy with a large number of small and medium-sized companies. In the manufacturing and services sectors, small enterprises (with less than 50 employees) accounted for 97% of the total number of firms in 2005 (Figure 1). Denmark seems to have a fewer micro firms (between 1-9 employees): these represented 87% of firms in manufacturing and services in Denmark, as against over 90% for some of the Nordic countries (92% for Finland and 94% for Sweden). In addition, Denmark has a relatively higher share of medium-sized enterprises (50-249 employees).

**Figure 1.** Number of companies in the manufacturing industry and in market services<sup>1</sup>, by firm size 2005



1. Excluding financial intermediation (ISIC 65-67) and Community, social and personal services (ISIC 75-99). For the United States: 1-9; 10-19; 20-99; 100-499; 500+.

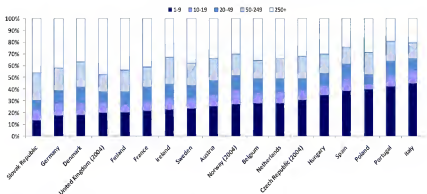
Source: Structural and Demographic Business Statistics (SDBS), OECD 2008

1.2 As regards employment, small enterprises (less than 50 employees) represented about 42% of total employment in manufacturing and services. Denmark positions itself in the middle of the group of

OECD countries. In other European countries like for example Italy, Spain or Portugal, small enterprises represented over 60% of total employment (Figure 2). In Finland, Germany or the United Kingdom on the other hand, small enterprises represented a lower share of the employment (between 37% and 39%).

1.3 Reflecting their relative larger number, medium-sized enterprises absorb a more important share of the total employment in Denmark (21%) in comparison to other countries such as Finland (18%), Germany (19%), Sweden (18%) and the United Kingdom (15%). Large enterprises on the other hand represent comparatively a lower share: 37% in Denmark as against 44% in Finland, 42% in Germany and 47% in the United Kingdom (Figure 2). Since Denmark has a higher proportion of large companies (more than 500 employees) compared to other Nordic countries, such as Finland or Norway, this means that on average the large Danish companies have considerably fewer employees.

**Figure 2.** Employment<sup>1</sup> (number engaged) in the manufacturing industry and in market services<sup>2</sup>, by firm size 2005



1. Number of persons engaged

2. Excluding financial intermediation (ISIC 65-67) and Community, social and personal services (ISIC 75-99).

Source: Structural and Demographic Business Statistics (SDBS) OECD 2008

## 1.2. Main industry sectors

1.4 Like in other European countries, the services sector is dominant in the Danish economy representing 73% of the total value added in 2005. While services in Europe represented about 71% of the total value added, this sector is more prominent in the United States representing 77% of industry value added and 81% of the total employment (76% in Denmark) (Table 1).

1.5 The manufacturing sector in Denmark has less weight than in European and Nordic countries, representing 13% of industry value added in Denmark, as against 18% in the European Union and 17% in the Nordic countries. In this respect, Denmark is more similar to the United States where the weight of the manufacturing sector is similar.

1.6 Resource endowment in raw material from the North Sea has incited Denmark to develop methods to extract oil and gas. Raw material has increased its share in industry value added as a

consequence, with mining and quarrying representing about 4% of industry value added. This share is far above the European Union average of 0.5%. In addition, Denmark is a world leader in the development of wind energy, its companies servicing 30% of the world market.

Table 1. Sectoral distribution of value added and employment, 2005

Industry Sectors	Value added				
	Denmark	United States	Nordic countries	European Union	OECD
Agriculture, Hunting, Forestry and Fishing	1.4	1.0	1.7	1.9	1.5
Mining and Quarrying	3.9	1.8	8.9	0.5	1.8
Electricity, Gas and Water supply	2.1	2.0	2.6	2.1	2.1
Construction	5.4	4.9	4.8	6.1	5.6
Manufacturing	13.6	13.1	17.2	18.2	15.5
Services	73.6	77.1	64.8	71.2	73.7
Total	100.0	100.0	100.0	100.0	100.0
Industry Sectors	Total employment				
	Denmark	United States	Nordic countries	European Union	OECD
Agriculture, Hunting, Forestry and Fishing	3.0	1.8	3.3	3.7	3.0
Mining and Quarrying	0.1	0.4	0.6	0.2	0.3
Electricity, Gas and Water supply	0.5	0.4	0.7	0.6	0.5
Construction	6.3	6.1	6.2	7.3	6.8
Manufacturing	14.1	10.3	15.5	17.3	13.9
Services	76.0	81.2	73.8	70.9	75.4
Total	100.0	100.0	100.0	100.0	100.0

Note. Nordic countries include Finland, Norway and Sweden. European Union countries include 14 European countries available in the STAN database.

Source: STAN Database for Structural Analysis ed2008, OECD

1.7 Within the services sector, community, social and personal services (Table 2) accounted for the highest share of services value added<sup>1</sup> (37%) in 2005, reflecting the prominence of the public sector in Denmark. As regards market services, business services and real estate services have experienced a strong growth in recent years. The provision of consultancy services, notably in the areas of infrastructure, telecommunications, environmental technologies and design, is significant not only on the domestic market, but also in exports. Although the weight of financial intermediation in Denmark (7%) is lower than in the OECD (9%) it is more present than in the other Nordic countries (5%) due to the presence of two major banks: Den Danske Bank and Nordea. Finally, Denmark has always been well positioned in terms of transports and commands extensive trading and distribution networks. Danish firms are notably very competitive in sea transportation and operate a large and modern fleet.

1.8 The manufacturing sector in Denmark is varied and produces a large number of goods both for the domestic market and for exports. Danish industry largely consists of light manufacturing and reprocessing, making machinery and equipment the main contributor in terms of manufacturing value added. The mechanical industry produces mainly motors, agricultural machines, pumps, thermostats, refrigerators and telecommunication equipment. Petrol, pharmaceuticals (insulin, antibiotics and psychotropics) and plastic goods are very present in the chemical industry. Finally, the food processing and agricultural industry are also important manufacturing sectors: food products, beverages and tobacco represented nearly 17% of manufacturing value added in 2005. This is high in comparison to the other Nordic countries (9%) but also to the OECD average (10%). Bacon factories, dairies, corn mills, and breweries are the most represented sectors.

<sup>1</sup> The measurement of value added in the public sector is hampered by with serious (methodological) problems, hence necessitating the careful interpretation of these figures.

**Table 2.** Value added in 2005 (in %), manufacturing and services

	Denmark	United States	Nordic countries	European Union	OECD
<b>Manufacturing</b>					
Food products, beverages and tobacco	16.8	10.1	9.5	11.0	10.4
Textiles, textile products, leather and footwear	1.9	2.3	1.3	4.2	3.2
Wood and products of wood and cork	3.1	2.3	4.5	2.1	2.1
Pulp, paper, paper products, printing and publishing	9.4	14.8	13.6	8.0	10.9
Chemical, rubber, plastics and fuel products	19.3	21.1	14.1	17.2	19.1
Other non-metallic mineral products	4.2	3.1	2.9	4.6	3.8
Basic metals and fabricated metal products	10.3	11.1	13.8	14.5	13.1
Machinery and equipment	28.7	17.9	27.5	23.8	21.5
Transport equipment	2.6	11.1	10.1	10.8	11.0
Manufacturing n.a.c. and recycling	5.6	6.1	2.7	3.7	4.7
Total manufacturing	100.0	100.0	100.0	100.0	100.0
<b>Services</b>					
Wholesale and Retail trade, Restaurants and Hotels	18.2	19.5	17.7	19.7	19.5
Transport, Storage and Communications	12.2	7.8	12.7	9.6	8.7
Financial intermediation	7.3	10.2	5.6	7.2	9.3
Real estate, renting and business activities	25.2	31.8	27.9	31.4	31.3
Community, Social and Personal services	37.1	30.7	35.7	32.0	31.2
Total services	100.0	100.0	100.0	100.0	100.0

1. The category *machinery and equipment* includes the following sub-categories: office accounting and computing; electrical machinery and apparatus; radio, television and communication equipment, medical precision and optical instruments.

2. Financial intermediation includes financial intermediation, insurance and pension funding.

3. Real estate, renting and business activities include real estate activities, renting of machinery and equipment, computer and related activities as well as research and development.

4. Community, social and personal services include non-market activities such as public administration, education and health services.

5. Nordic countries include Finland, Norway and Sweden. European Union countries include 14 European countries available in the STAN database.

Source: STAN Database for Structural Analysis ed2008, OECD

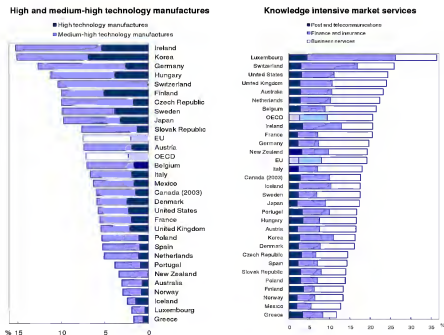
1.9 Increasing global competition requires developed countries to move up the value chain in order to stay competitive (OECD, 2007). In general OECD countries move towards more knowledge-intensive and higher value-added activities while labor and material-intensive industries decrease in importance. Denmark is no exception as relatively labor and material-intensive industries such as food processing, textiles and metals have stagnated or even decreased, while high-technology sectors such as chemicals, biotechnology, information technology, electronics and engineering have increased their importance<sup>2</sup>.

1.10 All industries generate and/or exploit new technology and knowledge to some extent, but some are more technology- and/or knowledge-intensive than others (OECD 2008). To gauge the importance of technology and knowledge, one typically focus on the leading *producers* of high-technology goods and on the activities (including services) that are intensive *users* of high technology and/or have the relatively highly skilled workforce necessary to benefit fully from technological innovations. High- and medium-high-technology manufacturing accounted for about 6% of total value added in Denmark, which is a bit lower than the OECD average (7.5%). Also in terms of knowledge intensive services, Denmark appears to perform less strong than other OECD countries: the share of knowledge intensive services in Denmark is about 15% while 20% for the whole OECD area.

<sup>2</sup> Nevertheless, some segments in more traditional industries are characterized by high technology and knowledge intensity and may consequently grow in importance.

**Figure 3. Technology and knowledge intensive industries**

Share of total gross value added, 2004

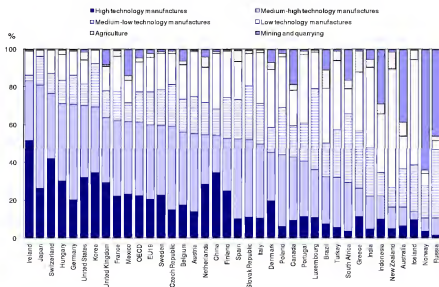


Source: STI Scoreboard (OECD, 2007)

**1.3. International orientation and openness**

1.11 Due to the small size of the domestic market, the Danish manufacturing industry is highly export-oriented. European markets account for 70% of total exports; Germany, Sweden, the United Kingdom and the United States alone accounting for 50% of Danish exports. The agricultural and the food-processing sectors represent about 20% of total exports, while the remaining 80% consists of manufactured goods, mainly machinery and instruments, pharmaceuticals and electronics.

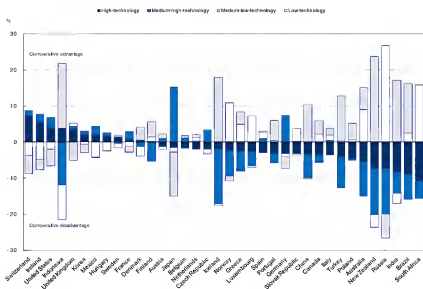
1.12 Reflecting the lower importance of technology-intensive industries in Denmark, exports of high and medium-high technology manufactured goods are smaller in Denmark compared to the OECD average. In 2005 high and medium-high technology intensive industries represented 45% of Denmark's total exports of manufactured goods and primary products (Figure 4), which is considerably lower than the OECD average of 65%. Denmark's performance compares unfavorably with Switzerland, the United States or Germany whose exports are particularly oriented towards high and medium-high technology manufactures.

**Figure 4.** Share of technology industries in total exports of manufactured goods and primary products, 2005

Source: OECD Science, Technology and Industry Scoreboard, 2007

1.13 Like many other OECD countries, low-technology industries are the main contributing industries to the Danish trade balance (Figure 5). High technology industries only represent a small surplus in Denmark (0.5%), while Denmark shows a comparative disadvantage in the export of medium (high and low) technology goods.

Figure 5. Contribution to the manufacturing trade balance, 2005



Source: OECD Science, Technology and Industry Scoreboard, 2007

1.14 Multinational firms seem to play a more limited role in Denmark in comparison to other OECD countries. The share of manufacturing turnover and employment controlled by foreign affiliates (inward direct investment) in Denmark is rather low (under 20%) compared to Sweden, the United Kingdom or the Netherlands (around 40%) (Figure 6). And notwithstanding a number of Danish multinational firms that are leaders in their field of specialisation (*i.e.*: Danfoss, Novozymes, Grundfos), also the importance of outward investment is found to be smaller for Denmark than for example from Sweden. Large multinational companies could facilitate the access for indigenous firms to international markets; hence the relative low presence of multinational companies in Denmark manufacturing may make it more difficult for Danish SMEs to participate as subcontractors in global value chains.

1.15 However, a recent study on international sourcing (Statistics Denmark, 2008) shows that Danish firms are nevertheless integrated in these emerging global value chains through the sourcing of business functions (totally or in parts) from abroad. In comparison to neighbouring countries, Danish enterprises rely more heavily on international sourcing. The study shows that almost 20% of all enterprises with 50 or more employees in Denmark sources internationally, compared to 16% for Finland and 14% for Norway and the Netherlands.

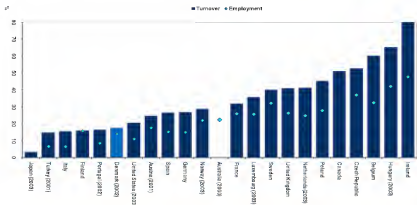
1.16 International sourcing can be done through own affiliates abroad (*i.e.* source business functions abroad within the same enterprise group) or through external partners in other countries. Overall, this last type of international sourcing of business functions external suppliers abroad is chosen less frequent. The

only exception is Denmark where international sourcing from own affiliates and external partners is almost equally important.

1.17 The main aim for Danish enterprises to outsource is cost reduction; access to new markets on the other hand seems not the main motivation to consider international sourcing. This observation is also valid for other countries as efficiency seeking factors such as cost reductions are found to be the main drivers of international sourcing. Labor cost reductions are most important for enterprises in Denmark, Sweden and the Netherlands, where almost 60 per cent of the enterprises considered labor cost reductions very important.

1.18 Unlike in neighbouring countries, where over 60% of sourcing activities are directed towards European Union (EU) countries, half of the international sourcing activities of Danish firms comes from countries outside the EU. One-third of all sourced functions find their way to Asia, China being the most frequent destination within Asia for so-called core functions. Old EU member states on the other hand are a more frequent destination for sourcing support functions (like e.g. ICT).

Figure 6. Foreign-controlled affiliates' share of manufacturing turnover<sup>1</sup> and employment, 2004



1. Production rather than turnover for Canada and Ireland.

Source: OECD Science, Technology and Industry Scoreboard, 2007

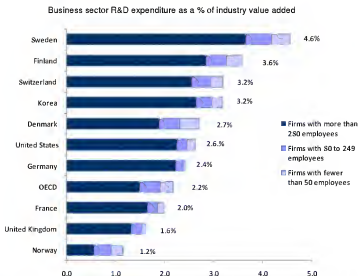
#### 1.4. Business sector R&D and Innovation

1.19 Investment in knowledge is a crucial factor for sustained growth in OECD countries as they are trying to move up the value chain. Business enterprise expenditure of R&D is essential to the creation of new products and production techniques and accounts for the bulk of R&D activity in OECD countries. Business R&D intensity in Denmark (2.7% of industry value added) is high and exceeds spending in the United States (Figure 7). It is nonetheless below other Nordic countries (except for Norway) as R&D expenditure is particularly high in Sweden and Finland (respectively 4.6% and 3.6% of industry value added).



1.20 Both small and large firms play an important role in countries' innovative performance and the share of R&D performed by SMEs (less than 250 employees) is generally greater in smaller economies than in larger ones. In Denmark, SMEs account for 30% of business R&D, which is higher than in most other countries except for Sweden (Figure 7).

Figure 7. Business R&D by size class, 2005



Note 1: data for Denmark is from 2003, data from France is from 2002, data for Germany is from 2003, data for Switzerland is from 2004.

Source: OECD Science, Technology and Industry Scoreboard, 2007

1.21 R&D investment account however for only one (technological) part of firms' innovativeness; likewise the focus on industries classified as high- and medium-high technology draws attention away from the changes that are appearing in less technology-intensive industries. Innovation Surveys can offer a more complete picture as they collect information on different innovation inputs and outputs of firms. These surveys generally indicate the strong innovativeness of Danish firms, especially of smaller and medium-sized companies.

1.22 While by definition all innovations must contain a degree of *novelty* (Oslo Manual), innovations can have different degrees of novelty<sup>3</sup>. Denmark has overall a rather high number of firms developing new ideas and products to the market. As in most other OECD countries, the gap between large firms and SMEs as regards the development of new to market product innovations is significant. But smaller Danish firms

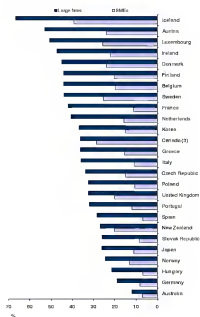
<sup>3</sup> The Oslo Manual distinguishes 3 relevant concepts: new to the firm, new to the market and new to the world. The first concept covers the diffusion of an existing innovation to a firm (the innovation may have already been implemented by other firms, but is new to the firm). Firms that first develop innovations (new to market or new to world) can be considered as drivers of the process of innovation.

are nonetheless more innovative than in other countries, with the exception of Iceland and Sweden (Figure 8).

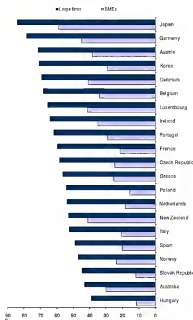
1.23 Danish firms also perform very well on non-technological innovation (marketing and organisational innovation, cfr. The Oslo Manual), which is an important dimension of many firms' innovation activities notably in services. Again, Denmark is one of the leading countries when comparing innovation survey data internationally. In addition, the gap between the innovation potential of large and small firms is less pronounced in Denmark than in other countries, suggesting that small Danish firms are advanced in developing non-technological innovations (Figure 8).

Figure 8. Innovative performance

Firms with new-to-market product innovations by size  
(as a percentage of all firms)<sup>1</sup>, 2002-2004<sup>2</sup>



Non-technological innovation<sup>3</sup> by size (as a percentage of all firms)<sup>3</sup>, 2002-04<sup>3</sup>



1. SMEs: 10-249 employees for European countries, Australia and Japan (persons employed), 10-99 for New Zealand, 10-299 for Korea, 20-249 for Canada.

2. Or nearest available years.

3. Manufacturing only.

1. Includes firms that introduced an organisational or a marketing innovation (or both).

2. SMEs: 10-249 employees for European countries, Australia and Japan (persons employed); 10-99 for New Zealand, 10-299 for Korea.

3. Or nearest available years.

Source: OECD Science, Technology and Industry Scoreboard, 2007

Source: OECD Science, Technology and Industry Scoreboard, 2007

## 2. Entrepreneurship in Denmark

### 2.1. Defining and measuring entrepreneurship

1.24 Entrepreneurship is a multifaceted concept and the diverse definitions proposed in the literature illustrate this clearly; entrepreneurship definitions are related to the entrepreneur's characteristics, resources, activities and impacts or results. In addition, while defining entrepreneurship is important, even more critical the empirical measurement of entrepreneurship for evidence-based policies for entrepreneurship.

1.25 The Entrepreneurship Indicator Program (EIP), jointly led by the OECD and Eurostat has made considerable progress in defining and measuring entrepreneurship in recent years. Agreement has been reached on definitions, core indicators of entrepreneurial performance and the data specification that will facilitate comparability. Joint data collection activities through the National Statistical Offices have been set up and the first results have recently been launched.

1.26 Drawing on an extended analysis of the literature, the following definitions of the entrepreneur, entrepreneurship, and entrepreneurial activity were proposed:

- Entrepreneurs are those persons (business owners) who seek to generate value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets.
- Entrepreneurial activity is the enterprising human action in pursuit of the generation of value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets.
- Entrepreneurship is the phenomena associated with entrepreneurial activity.

1.27 At the same time, a framework for measuring entrepreneurship has been proposed linking determinants of entrepreneurship to entrepreneurial performance and impact of entrepreneurship. The data collection has until now been focused on different indicators of entrepreneurial performance:

- Firm-based indicators: employer firm birth rate, employer firm death rate, business churn, net business population growth, survival rate (3 and 5 years);
- Employment based indicators: high growth firm rate by employment, gazelle rate by employment, employment of 3 and 5 years old firms, average firm size after 3 and 5 years;
- Other indicators: high growth firm rate by turnover, gazelle rate by turnover, export performance small firms.

1.28 Corresponding to these definitions, this report interprets entrepreneurship very broadly including entrepreneurship by new firms, entrepreneurship in existing firms or corporate entrepreneurship as well entrepreneurship by specific groups (female entrepreneurship, ethnic entrepreneurship)<sup>4</sup>. The empirical evidence is principally based on analyses of the Danish government, more specifically the publication 'Entrepreneurship Index, 2007', since Denmark has not been included in the first group of EIP-results that has been launched very recently, hence making it less appropriate these results in this report. It should be

<sup>4</sup> Within the OECD Centre for Entrepreneurship (CFE), several studies have been conducted on female and ethnic entrepreneurship.

taken into account then that the Danish figures are not completely comparable with entrepreneurship for other countries.

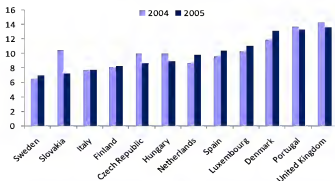
## 2.2 Business start-ups

1.29 The creation of new business and the closure of failing ones are considered as an important source of economic dynamism and creative destruction. This churning is viewed as a measure of an economy's ability to expand the boundaries of economic activity and to shift resources towards growing areas and away from declining ones, as well as to adjust the structure of production to consumer's changing needs.

1.30 In 2005, the Danish start-up rate increased to 13%, meaning that 13 out of every 100 enterprises were new. Denmark is therewith situated among the European countries with the highest number of new firms relative to the stock of existing companies (Figure 9).

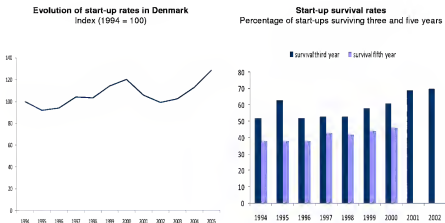
Figure 9. Enterprise start-up rates

As a percentage of the total number of enterprises



Source: Entrepreneurship Index 2007, Danish Enterprise and Construction Authority

1.31 With around 17 500 new enterprises in 2005, Denmark has reached the highest start-up rate since 1994 (Figure 10). In addition, survival rates of Danish start-up have been rising since 2001 resulting in a strong performance and increasing role of new/young firm in the Danish economy (Figure 10). The positive economic climate is regarded as the most important explanation for these positive trends.

**Figure 10.** Start-up and survival rates

Note: There has been a change in the registering of start-ups in 2001.

Source: Report on competitiveness, Danish government, 2008

Note: There has been a change in the registering of start-ups in 2001.

Source: Report on competitiveness, Danish government, 2008

1.32 Between 2003 and 2005, new enterprises were mainly created in the following sectors: finance and business activities; wholesale and retail trade, hotels and restaurants followed by construction and public and personal services. As regards regional distribution, start-up rates are relatively even across the five Danish regions, although most enterprises are created in the capital region (Figure 11).

**Figure 11.** Start-up rates in the Danish regions

Source: Statistics Denmark 2008.

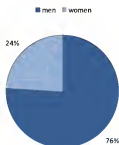
1.33 Most Danish enterprises are created by men (76%) while 24% of the businesses were started by women in 2004 (Figure 12). This may in part be explained by the fact that about half of Danish women are

employed in the public sector (against only one fifth of the men). In addition, most of Danish start-ups that enter high-growth trajectories are set up by men.

1.34 Both men and women mainly start their own business between the age of 30 and 44. Women tend to start their business slightly later than men: while comparatively more men would start their business between the age of 25 and 35, more women would start a business between the age of 40 and 50. This is likely to be linked to childbearing and care.

**Figure 12.** Gender distribution of Danish entrepreneurs

Share of businesses created by men and by women in 2004



Source: Erhvervs- og Byggestyrelsen 2008: Kvinder kan få succes med egen virksomhed

### 2.3. The need for high-growth enterprises

1.35 High-growth enterprises are key actors for economic growth and are crucial in creating new jobs. Birch (1994) found that rapidly growing firms which he termed 'gazelles' are responsible for most employment growth: a small number of these growing firms created a disproportionately large share of all new jobs in the United States. These gazelles are typically neither small nor large, instead they move between small and large quickly because of their great innovation and rapid job growth (Birch and Medoff, 1994).

1.36 High-growth SMEs often introduce and commercialise radical innovations, which are often then be refined and mass produced by larger companies (Bethèze and Saint-Etienne, 2006). Their product, process or business model innovations allow developing new markets with accompanying spill-over effects for other enterprises. They seem on average to be more R&D intensive and often younger compared to firms with normal growth trajectories. To expand, these enterprises rely mainly on internal growth through innovation, but also on external growth through company buyouts. Growth patterns come in various shapes and forms: while for some enterprises growth occurs evenly over time, others will experience sudden and intense growth at a certain period of time.

1.37 In a recent study, Acs et al. (2008) study the characteristics of so-called 'high impact firms' in the United States, defined as firms with significant revenue growth and expanding employment. Overall, high impact firms are relatively old, rare and contribute to the majority of overall economic growth. On average, they are 25 years old, they represent between 2 and 3% of all firms in the United States and they account for almost all of the private sector employment and revenue growth in the economy. High impact firms

exist in all industries, and while some industries have a higher percentage of these firms, they are not limited to high technology industries.

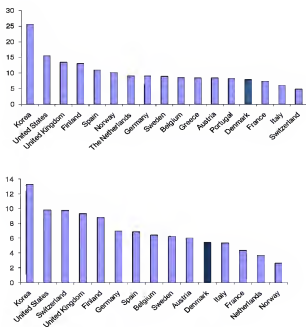
1.38 Although similarities with earlier results on gazelles are observed, also some differences within categories of high growth firms were found. Especially the high average age of high impact firms is different from the general knowledge about gazelles: less than 3% of the high impact firms were born in the previous four-year period, but that number doubles to over 6% however as firm size increases (Acs et al., 2008).

1.39 In comparing the performance of high growth firms in Denmark with other countries<sup>5</sup>, Denmark is significantly outperformed by leading OECD countries such as Korea, Ireland and the United States. The share of growth entrepreneurs in turnover as well as in employment is much larger in these countries; Denmark is found only in the lower half of the ranking (Figure 13). The United States for example had twice as many growth enterprises: while 4.4% of all firms experience high growth in the United States, this share drops to 2.9% for Denmark. Based on this the government concluded that Denmark not only needs more growth enterprises, but also more young enterprises entering high-growth trajectories in order to reach the level of growth experienced by enterprises in the United States.

1.40 Although they are found in all industries and regions, high-growth enterprises tend to be concentrated in a limited number of sectors. Based on employment growth in 2003, most high-growth enterprises (15% of all growth enterprises) in Denmark were found in the wholesale sector, while business services ranked second. In terms of high turnover growth, the most represented sectors were postal service and telecommunications (13%), research and development and IT services (Entrepreneurship Index, 2007). In comparison to the United States, Denmark had more growth enterprises in the energy sector, in telecommunications and in the financial sector. Fewer growth enterprises were on the other hand found in construction, health, culture, hotels and restaurants.

1.41 As regards geographical distribution, 47% of new enterprises with high growth trajectories (*i.e.* gazelles) were located in the Capital region of Denmark, 20% in the Central Denmark Region and 16% in the Region of Southern Denmark. The Region Zealand and the North Denmark Region hosted respectively around 9% and 8% of the total number of gazelles (Table 3).

<sup>5</sup> The Entrepreneurship Index (2007), using a commercial database to assess the share of growth entrepreneurs across countries.

**Figure 13.** The share of growth entrepreneurs – turnover and employment, 2002-2003

Source: Entrepreneurship Index 2007, Danish Enterprise and Construction Authority

**Table 3.** Geographical distribution of gazelles

	New enterprises with 10+ employees	Gazelles	Share of Gazelles
The Capital Region of Denmark	1,418	109	8%
The Region Sealand	425	21	5%
The North Denmark Region	391	19	5%
The Region of Southern Denmark	802	36	4%
The Central Denmark Region	822	46	6%
Total	3,858	231	6%

Source: Calculations by the Danish Enterprise and Construction Authority based on data from Statistics Denmark.



## 2.4. Recent evolution of growth trajectories in Denmark

1.42 Out of the 280 000 firms registered in Denmark in 2002, 23 709 (8.5%) had more than 10 employees, therewith meeting the first requirement to become a high-growth enterprise (Box 1). Out of this pool of enterprises, 774 enterprises (3.3%) had experienced growth in employment between 2002 and 2005 while 1 901 enterprises (8%) had experienced growth in turnover (Figure 14). When assessing the number of high-growth enterprises, both growth in employment and turnover are measured as some firms may experience turnover growth without having to hire additional employees. Firms that experience significant employment growth may on the other hand not see high turnover growth.

### Box 1. Defining growth

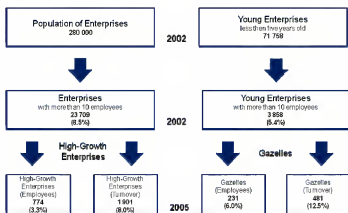
*High-Growth Enterprises* include all firms (old and new) that have at least 10 full-time employees (at year  $t$ ) and have experienced significant growth - average annual growth (employment or turnover) of more than 20% over a three year period (from year  $t$  to year  $t+3$ ).

*Gazelles* are young growth enterprises (less than five years old at year  $t$ ) that have at least 10 full-time employees (at year  $t$ ) that have experienced significant growth - average annual growth (employment or turnover) of more than 20% over a three year period (from year  $t$  to year  $t+3$ ).

Source: Entrepreneurship Index 2007 based on Eurostat-OECD Manual on Business Demography Statistics

1.43 As indicated in Figure 14, the number of firms experiencing turnover growth is significantly higher than the number of firms with growth in the number of employees (about twice as many in recent years). A number of firms meet both growth requirements: in 2003 60% of the enterprises experiencing growth in employment also had high turnover growth.

Figure 14. Growth enterprises and entrepreneurs in 2005



Source: The Danish Government 2008: Danmark i den globale økonomi: Konkurrencevaredegerelse 2008

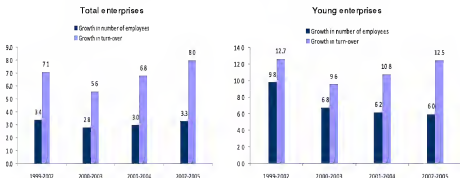
1.44 As regards young high-growth enterprises (gazelles), out of 71 758 new enterprises in 2002, 3 858 enterprises (5.3%) had more than 10 employees. Out of this pool of new enterprises, 231 (6%) had experienced high growth in the number of employees, while 481 (12.5%) experienced high growth in turnover between 2002 and 2005.

1.45 Gazelles in Denmark seem to represent a significant share of the high-growth enterprises. In 2005, 30% of the stock of enterprises that had experienced high growth in employment and 25% of the stock of enterprises with high turnover growth (Figure 14) were less than five years old. This is significant considering that young enterprises with more than ten employees only represent 16% of the total number of enterprises with more than ten employees.

1.46 The share of enterprises entering high-growth trajectories among the enterprises and gazelles with more than 10 employees has risen since 2003 especially in terms of turnover growth. The share of enterprises experiencing growth in employment has only risen very moderately, while the share of gazelles with growth in the number of employees has declined since 2003<sup>6</sup> (Figure 15).

**Figure 15.** Share of enterprises experiencing high growth in employment and in turnover

In % of the total number enterprises, and young enterprises, with more than ten employees

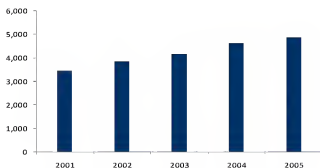


Note: young enterprises are less than five years old.

Source: Calculations by the Danish Enterprise and Construction Authority based on data from Statistics Denmark.

1.47 Since 2001, more young enterprises have been reaching the threshold of 10 employees, therewith meeting the first requirement to become a growth enterprise. The fact that the number of enterprises meeting this criteria has been rising is encouraging in the context of the Danish government's effort to increase the number of high-growth start-ups (Figure 16).

<sup>6</sup> The absolute number of enterprises has increased though: 216 enterprises in 2002 and 231 enterprises in 2005.

**Figure 16.** Number of young enterprises with more than ten employees

Source: Calculations by the Danish Enterprise and Construction Authority based on data from Statistics Denmark.

### 3. Concluding remarks

1.48 The Danish economy is a small and open economy with a large number of small and medium-sized enterprises. To compensate for the limited size of the domestic market, the manufacturing industry is highly export oriented. As in other European countries, the services sector is dominant in the Danish economy and the structural changes in the economy imply an increasing role for the services industries. The rising significance of this sector allows thinking that entrepreneurial opportunities in services will be substantial.

1.49 Start-up rates in Denmark have increased steadily in recent years and are high in international comparison. Also the overall importance of high growth firms is increasing but remains below the level of some other countries. In addition, the number of young enterprises reaching the threshold of ten employees has also recently increased. As in most other OECD countries, women create less businesses than men and are almost absent for start-ups entering high-growth trajectories. Attempts to unleash the potential of women could help reaching a higher number of high-growth start-ups.

1.50 In the context of advancing *globalisation*, the creation and expansion of a business involves integrating global value chains, subcontracting abroad and servicing international customers. This is particularly true for Danish enterprises as the national market is small. Young manufacturing enterprises entering high growth trajectories will for instance have to face the challenge of internationalisation from an early stage. In this context, facilitating the integration of new businesses with high growth potential into global value chains is essential. Finally, as Denmark performs relatively well in pharmaceuticals and medical equipment, where several medium-sized firms play a leading role, uncovering the potential of high-growth start-ups in these competitive areas of specialisation in high-technology manufacturing would be an asset.

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## CHAPTER 2 : FRAMEWORK CONDITIONS FOR ENTREPRENEURSHIP IN DENMARK

This chapter discusses the so-called framework conditions for entrepreneurship in Denmark and benchmarks these determinants for entrepreneurship internationally. Following a framework linking entrepreneurial determinants, performance and impact, different framework conditions are analysed in detail: entrepreneurial capabilities, access to finance, R&D and technology, market conditions, the regulatory framework and entrepreneurial culture.

### 1. The overall business environment in Denmark

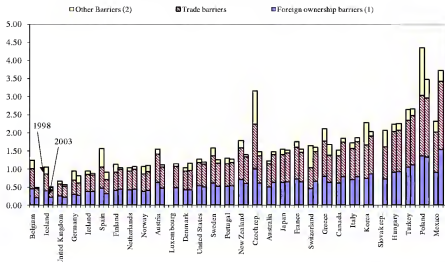
2.1 The performance of Denmark's economy compares well with major trading partners. Productivity and per capita GDP are high in European and wider international terms, open unemployment is low and the economy generates a tax base which sustains a high level of public spending on social services and income support while contributing to an unusually narrow income distribution. Productivity improvements have however slowed down in recent years and the gap in GDP per capita relative to the best performing countries remains. Specific challenges that currently face the Danish economy are some labour market overheating and a slowdown in activity taking place in the wider context of credit market disturbances arising from the sub-prime real estate problems in the United States.

2.2 The overall business environment in Denmark provides a good framework for business activity, which is a pre-condition for encouraging entrepreneurship and reaping its benefits:

- *Opportunities abound.* The economy is a small and very open part of the much larger EU single market, which in turn is highly integrated in the larger global economy. Barriers to international trade and investment, including those arising from regulatory rules, discriminatory procedures and restrictions on foreign acquisition of shares, are low by international standards, although not the lowest in the OECD (Figure 17).

**Figure 17.** Indicators of barriers to trade and investment

(0-6 scale from most to least favourable to competition)

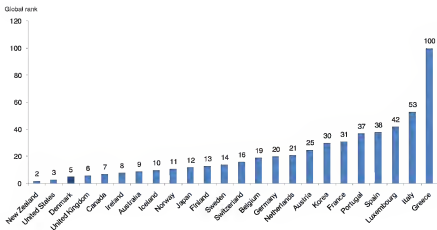


1. Includes only restrictions to foreign acquisitions of shares. See Golub (2003) for a broader indicator of FDI

2. Includes regulatory barriers and discriminatory procedures.

Source: Hoj et al (2007)

- *The general ease of doing business is good.* As measured by the World Bank, it is the best in Europe and 5<sup>th</sup> in the world (Figure 18). The OECD's Competition Law and Policy indicator rated Denmark almost as highly in 2003, a ranking that probably has not changed much.

**Figure 18.** Ease of Doing Business, aggregate rankings for OECD, High Income Countries

Source: World Bank, Doing Business database, 2008.

- *Government finances are currently in good shape*, even if public spending and taxation are high. Retrenchment during the 1990s and rising oil and gas related revenues more recently have transformed the poor position of 10-15 years ago into one of structural surplus today (Figure 2.4).
- *Inflation and interest rates are low and in line with those in the euro area*, related to the effective delegation of monetary policy to the European Central Bank and a tight link between the kroner and the euro.

2.3 Notwithstanding its current strong performance, the Danish economy, like most OECD economies, faces important challenges in the shape of an ageing population and continuing *globalisation* of the world economy. In recognition of these challenges, the government appointed: (i) the Welfare Commission in 2003 to analyse the fiscal implications of ageing and to make proposals to strengthen labour supply and mobilisation; and (ii) the *globalisation* Council in 2005 to produce a *Strategy for Denmark in the Global Economy*<sup>7</sup> to strengthen competitiveness as well as social cohesion. The resulting policy package, *Future Prosperity and Welfare – Welfare Reforms and Investment for the Future*,<sup>8</sup> gave high prominence to entrepreneurship and the contribution it can make to meet these challenges by strengthening productivity growth and employment. In particular, it stressed the contribution that *high growth* start-ups can make and it set targets:

<sup>7</sup> Government of Denmark, *Fremgang, fornyelse og tryghed*, 2006., [www.globalisering.dk](http://www.globalisering.dk).

<sup>8</sup> Government of Denmark, *Fremtidens velstand og velfærd – velfærdsreformer og investeringer i fremtiden*, 4 April 2006, [www.fm.dk](http://www.fm.dk). The funding for entrepreneurship and innovation was allocated in the Agreement on the Implementation of the Globalisation Strategy, Follow up on the Welfare Agreement, Follow up on the Coming Agreement on Future Immigration

- Denmark should continue to be among the European countries with the highest number of new companies launched each year;
- Denmark should in 2015 be among the countries with the highest share of high-growth start-ups.

2.4 Many elements of the overall public policy framework impinge importantly on the ability of the economy to achieve these objectives. The high level of taxes necessary to fund the social support system for example may work against entrepreneurship in Denmark by providing a risk-reward trade-off that encourages low risk, low return activities (see below). This chapter discusses the most important factors impacting entrepreneurship using a structured framework for analysing entrepreneurship and its policies.

## 2. A framework for analysing entrepreneurship

2.5 A country's entrepreneurial activity and performance depends on a broad range of factors, some of which can be directly impacted by governments, while others only in an indirect manner. In order to analyse these factors in Denmark in detail, the OECD/EUROSTAT framework for Entrepreneurship Indicators has been used (Ahmad and Hoffmann, 2008). This framework originally designed to arrive at internationally comparable indicators on entrepreneurship, explicitly distinguishes between the impact of entrepreneurship (on the national economy), the entrepreneurial performance and determinants of entrepreneurship (Figure 19).

2.6 The framework has been based on the vast literature on entrepreneurship which discusses how entrepreneurs and entrepreneurship are basically created by a combination of three factors: *opportunities, skilled people and resources*. These three factors are all affected by two important factors the surrounding *regulatory framework and culture* (Ahmad and Hoffmann, 2008).

2.7 Resources reflect *access to capital, R&D and technology*. Many studies on entrepreneurship highlight capital as one of the most critical factors for success (EU, 2003) in all phases of business life, from access to early seed funds to access to the stock markets. R&D generally creates new inventions that the entrepreneur and entrepreneurial businesses can turn into new products or processes.

2.8 *Entrepreneurial capabilities* include the human and social capital of the entrepreneurs. Skilled people and competences relate to the capabilities of the entrepreneur and access to other capabilities within the entrepreneurial infrastructure (Lee et. al, 2000).

2.9 Opportunities are created by the *market conditions* in the country. These market conditions include public involvement in markets, competition in the markets, access to foreign markets, procurement regulation and so on.

2.10 Entrepreneurship happens within a *regulatory framework*. A combination of opportunity, capabilities and resources does not necessarily lead to entrepreneurship if opportunity costs (e.g. forgone salary and loss of health insurance) and start-up costs outweigh the potential benefits. The regulatory framework can be defined very broadly and includes all taxes, regulations and other public rules and institutions affecting entrepreneurship. Entrepreneurship is also affected by basic macroeconomic conditions. High unemployment, for instance, might be expected to increase the share of individuals motivated to become entrepreneurs.

2.11 Finally, *culture* affects all parts of the model and is included as the final factor in the framework. Culture influences an entrepreneur's behaviour, attitudes, and overall effectiveness and, moreover, is often unnoticed by the entrepreneur (Ivancevich & Matteson, 1996). In the proposed framework, culture



comprises each individual's assumptions, adaptations, perceptions and learning (Ahmad and Hoffmann, 2008).

2.12 The framework describes six themes (*access to capital, access to R&D & technology, capabilities, market conditions, regulatory framework and culture*) as the determinants of entrepreneurship. These factors are generally considered as the conditions that entrepreneurs are subject to and are consequently referred to as framework conditions (Entrepreneurship Index 2007). In discussing these framework conditions individually, empirical evidence from different has been used.

Figure 19. The OECD/EUROSTAT framework for Entrepreneurship Indicators

Determinants						Entrepreneurial Performance	Impact
Regulatory Framework	Market Conditions	Access to Finance	R&D and Technology	Entrepreneurial Capabilities	Culture	Firms	Job Creation
Administrative Burdens for Entry	Anti-Trust Laws	Access to Debt Financing	R&D Investment	Training and experience of entrepreneurs	Risk Attitude in Society	Employment	Economic Growth
Administrative Burdens for Growth	Competition	Business Angels	University/ Industry Interface	Business and Entrepreneurship Education (skills)	Attitudes Towards Entrepreneurism	Wealth	Poverty Reduction
Bankruptcy Regulations	Access to the Domestic Market	Access to VC	Technological Cooperation Between Firms	Entrepreneurship Infrastructure	Desire for Business Ownership		Formalising the Informal Sector
Safety, Health and Environmental Regulations	Access to Foreign Markets	Access to Other Types of Equity	Technology Diffusion	Immigration	Entrepreneurship Education (mindset)		
Product Regulation	Degree of Public Involvement	Stock Markets	Broadband Access				
Labour Market Regulation	Public Procurement		Patent System/ Standards				
Court & Legal Framework							
Social and Health Security							
Income Taxes, Wealth/Success Taxes							
Business and Capital Taxes							

Source: Ahmad and Hoffmann (2008)

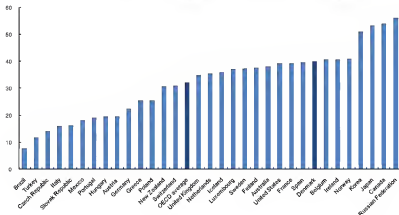
### 3. Entrepreneurial capabilities and human resources

2.13 While education standards and achievement in Denmark are generally good, they do no longer stand out in international terms; the proportion of young people acquiring tertiary qualifications for example is now well below the top performing countries such as Japan and Korea (Figure 20). Given the

importance of human capital in the era of increasing globalisation, the slow progress in human capital formation may hinder the Danish economy in reaping the benefits of *globalisation* (OECD, 2006)<sup>9</sup>.

**Figure 20.** Tertiary attainment for age group 25-34

As a percentage of the population of that age group, 2005 or latest available year



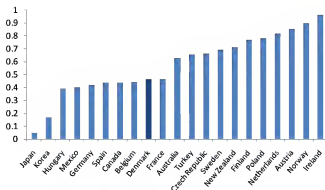
Source: OECD (2007), *Education at a Glance*.

2.14 Analysing specific (government) policies of entrepreneurship education, internationally comparable data indicate that Denmark only occupies an average position among the OECD countries (OECD, 2005). Analysing the policy planning ('how many entrepreneurship education policies exist'), ('to what extent entrepreneurship education has been implemented') and evaluation ('how much monitoring and evaluation of entrepreneurship education') in lower and secondary education, Denmark positioned itself in the second half of the group of OECD countries (Figure 21). Also in higher education, entrepreneurship education seems to receive less attention than in other countries (Global Entrepreneurship Monitor, 2007; Entrepreneurship Index 2007). Different initiatives have been launched to strengthen the entrepreneurship education in Denmark during the last years (see chapter 3). More recent surveys show that Denmark has made significant progress in entrepreneurship education (Entrepreneurship Index 2007).

<sup>9</sup> Notwithstanding the focus in the OECD Economic Survey of Denmark (OECD, 2006) was broader than entrepreneurship, it points to an important area affecting entrepreneurial capabilities that could benefit from attention.

**Figure 21.** Entrepreneurship education policies

From 0 (low) to 1 (high)



Note: the indicator is the average score on 11 different questions

Source: Entrepreneurship Index 2007, Danish Enterprise and Construction Authority

### Formal education

2.15 The *Globalisation Strategy* accords a prominent role to initiatives to strengthen human capital in Denmark by focusing strongly on the formal education system:

- *Compulsory<sup>10</sup> education*: the *Strategy* proposed greater stress on core subjects, enhanced standards, nationally standardised tests and earlier entrance to the introductory year (age 6). Municipalities can withhold child benefit payments to deter absenteeism and greater awareness of foreign cultures should be encouraged to give children more of a global perspective earlier.
- *Upper secondary education*: a target has been set for at least 85% of a youth cohort to complete upper secondary education by 2010 and at least 95% by 2015. Apprenticeships have been encouraged, resulting in an increase of more than 40% during the past four years, and vocational training is being made more practical to reduce dropout rates.
- *Tertiary education*: a target has been set for 50% of a youth cohort to complete tertiary education in 2015. Science and technology should be encouraged more in preparatory years, more should be done to reduce dropout rates and degrees should typically be complete by age 25<sup>11</sup>.
- *Reform of tertiary institutions*: short and medium length tertiary education institutions, providing a range of professional qualifications, are encouraged to be better connected to business and universities. Universities, in turn, are being pushed to link better with sector research institutes, to strengthen teaching, and to strengthen ties to potential employers of graduates. They are

<sup>10</sup> This appears to correspond to primary education.

<sup>11</sup> Striking features of Danish experience include late starts and high drop-out rates at the tertiary level. See *OECD Survey of Denmark, 2006*, chapter 3 for discussion

encouraged to establish elite Masters Programs and aim to double the number of Ph.D. students, with an emphasis on science and technology.

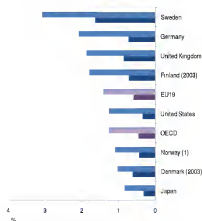
2.16 If the *Globalisation Strategy* can deliver on these objectives it is likely to generate meaningful improvements, although visible benefits will emerge only over a relatively long time frame. Since Denmark lags somewhat internationally in terms of science and technology graduation rates and delivery of higher degrees such as doctorates (Figure 22), more attention on these areas is welcome.

Figure 22. New university graduates

#### Graduation rates at doctorate level, 2004

As a percentage of the relevant age cohort

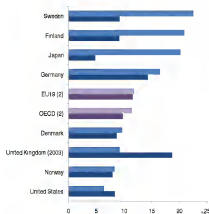
■ All doctorates ■ Doctorates in science and engineering



#### Science and engineering degrees, 2004

As a percentage of total new degrees

■ Engineering ■ Science



1. 2003 for doctoral degrees in science and engineering.

2. Excludes Luxembourg, 2003 data for the United Kingdom are used.

3. For South Africa and Brazil: ISCED 5B programmes are included with ISCED 5A/6.

Source: OECD, Education database, 2007, UNESCO Institute for Statistics and China Statistical Yearbook 2005.

### Continuing adult education and training

2.17 The *Globalisation Strategy* also addresses continuing education and training outside the formal system, although it seems somewhat more concerned with social considerations than with the needs of entrepreneurs and rapidly growing small businesses. To some degree this reflects the fact that participation in adult education and continuing training in Denmark is high compared with other countries as well as Danish success in involving poorly educated people and those with literacy problems. The *Strategy* contains some initiatives to improve the engagement of people lacking in basic literacy skills, to have universities offer more short-duration courses targeted at labour market needs and more flexible tuition fee and subsidy structures.

2.18 Considerably less emphasis is placed on strengthening the management capacities of entrepreneurs, either in the formal system or in the context of life-long learning. The *Globalisation Strategy* envisages that vocational and higher education courses should include subjects or courses in

entrepreneurship, evidently as options, but otherwise focuses primarily on developing strengths in the science and technology domains. Additionally, more efforts could be devoted to strengthening the curricula of traditional business schools, so that they provide more effective training to aspiring entrepreneurs seems to receive only limited attention.

### *Immigration*

2.19 A major area that impacts on entrepreneurial capabilities is immigration policy and its implications for strengthening human resources by drawing on the rest of the world. In OECD countries, the tide is flowing very much towards measures that attract highly skilled labor that will increase global economic success. Attention is paid to foreign graduates of domestic universities who are seen as potential settled immigrants (Australia, Canada, New Zealand) or highly skilled recruits into domestic labor markets (Austria, France, Germany, Luxembourg, Ireland, Netherlands, United Kingdom) (Box 2).

2.20 The *Globalisation Strategy* explicitly recognises the importance of an international perspective and emphasises the need to integrate this throughout the education system<sup>12</sup>. It also called for a green card system to allow highly skilled foreigners without job offers six months residence to find one, and this is being expanded following the Canadian model which favours certain skills or experience. It is notable, though, that highly skilled immigrants who reside in Denmark are not as well assimilated as they might be, as they have relatively low employment rates<sup>13</sup>, perhaps reflecting language barriers. In addition, conditions for more extended residence permission are relatively demanding<sup>14</sup>.

<sup>12</sup> For example, by increasing the use of English, encouraging international projects and funding more scholarships for foreign study.

<sup>13</sup> See discussion in *OECD Survey of Denmark*, 2008, chapter 1.

<sup>14</sup> *Future Prosperity and Welfare* envisages that indefinite residence permission should require seven years of residence, including regular work for two years and passing a Danish language exam. Family reunification will require passing an exam in the migrant's home country documenting basic knowledge of Danish society and language.

**Box 2. Schemes to attract highly-skilled workers in Canada, the United Kingdom and Ireland**

In Canada, international students are seen to have a role in spreading the benefits of immigration to more of Canada's regions as well as helping Canada maintain its competitive edge in attracting international students. In collaboration with provinces and territories, the Post-Graduation Work Permit Programme was significantly changed in 2008 by extending work permits to up to three years for international students who have graduated from public tertiary and certain private institutions.

In the United Kingdom the new points-based system is specifically designed to select persons with those skills regarded as beneficial to the national economy. Tier 1, the old Highly Skilled Migrant Programme, includes four categories: General (highly skilled migrants and the self-employed), Entrepreneurs, Investors (high net-worth individuals) and Post-Study (international graduates from United Kingdom universities). Qualifying individuals will be offered unrestricted access to the United Kingdom labour market without a prior job offer or sponsor for a defined period of time – two years for Post-Study applicants and three years for the other categories that can lead to settlement. Points will be awarded against primary attributes, such as age, qualifications, the availability of sufficient funds to support themselves and their dependants, and English language capabilities. Tier 2, based on the old work permit system, will allow employers to become sponsors of foreign workers. The Tier will include intra-company transferees who automatically have the right to enter; shortage occupations from a list compiled by a new Migration Advisory Committee; and other skilled occupations which will be subject to a resident labour market test.

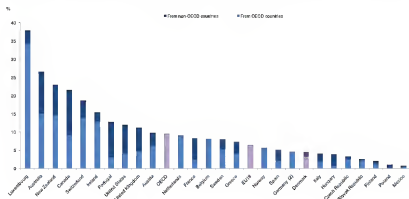
The Employment Permits Act of 2006 in Ireland introduced a type of 'green card' for skill shortage occupations which do not require a resident labour market test. Overall, the reformed system is part of a policy of meeting most labour needs from within the enlarged EU with relatively small numbers of very highly skilled coming as work permit holders in the future. The card is issued for two years in the first instance with the expectation that it will result in long-term residence. The occupation list is a restricted one for jobs paying 30-60 000 Euros, but more extensive for those paying more than 60 000. Card-holders are entitled to be accompanied by their spouses and families.

Source: OECD (2008), *International Migration Outlook*.

2.21 More could usefully be done in this area, as Denmark ranks well below both the OECD average and the average for EU members which are also OECD countries in terms of the share of employed professionals and technicians who are international migrants (Figure 23). Entrepreneurship in Denmark would benefit from greater international mobility of skilled people, both by attracting potential entrepreneurs themselves and by attracting skilled people to supply skills and competences that may be in short supply on reasonable terms.

**Figure 23.** International Mobility of Highly Skilled People

Employed professional and technical migrants from OECD and non-OECD economies<sup>1</sup>, by country of residence, 2000 or 2001, as a percentage of total employed professionals and technicians in the country of residence



1. Data are not available for Iceland, Japan, Korea and Turkey, which are excluded from the OECD total.

2. Country of origin is unknown for a significant number of employees who have been excluded from the calculation.

Source: OECD, database on immigrants and expatriates, May 2007.

2.22 General policies toward immigration today reflect EU-related commitments as regards EU nationals, especially transitional arrangements for the newer EU members. A major shift in migrant composition has developed in recent decades with three quarters of foreign born residents now being from less developed countries, often lacking in basic skills – notably Danish language – and a high percentage dependent on public transfers. As a result, policies not governed by EU commitments are strongly framed by fiscal sustainability issues and efforts to upgrade skills, reduce unemployment traps and integrate existing migrants into the active workforce.

2.23 While the emphasis on work is probably helpful, policies to make the business environment more attractive to potential entrepreneurs should be tailored better to both attracting highly skilled migrants to Denmark and retaining them once they are there. One issue is high tax levels, especially top marginal rates on labour income (see below). Since markets for many highly skilled personnel are very international and high Danish tax rates are a disincentive, some concessionary arrangements (limited in time) exist for foreign specialists (see below). Another issue concerns requirements and the speed of administrative procedures regarding visas and, especially for people from new EU members, residence and work permits. It is important that conditions imposed to deal with more general issues related to immigration do not work to exclude the entrepreneurial and highly skilled who make the knowledge economy succeed.

2.24 Given the increasingly international character of science and technology, the specific issue of international mobility of human resources for entrepreneurship may merit more attention than it has received<sup>15</sup> until now. Universities and publicly financed research institutes often straddle the public-private and interdisciplinary boundaries where much successful innovation takes place; their policies toward

<sup>15</sup>

This issue was one of the topics addressed by OECD Science Ministers in 2004. See *Science and Innovation Policy, Key Challenges and Opportunities*, Meeting of the OECD Committee for Scientific and Technology Policy at Ministerial Level, 29-30 January 2004.

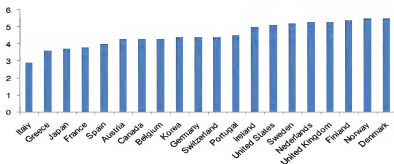
financial support for doctoral, post-doctoral and exchange programmes, internationally competitive salary schedules and career prospects are therefore central to this issue. The *Globalisation Strategy* both stresses the importance of a global perspective and the need for meeting international standards at universities and government research institutions. But apart from stressing greater competence in, and use of, English, its attention to this issue is largely limited to proposing increases in scholarships for young Danes to study abroad and for bright students to study in Denmark. An in-depth review of policies in this area would be useful with a view to identifying ways to attract more international skills and talent to Denmark.<sup>16</sup>

#### 4. Access to finance

2.25 Overall, the availability of financial resources for the business sector in Denmark looks positive (Figure 24). Creditworthy businesses with reasonable collateral, which includes many SMEs, seem generally be able to find loan capital and fund their operations, while established businesses could also access markets elsewhere in the EU or, in many cases, wider international markets.

2.26 This generally positive appraisal does not, however, imply that Danish institutions have mobilised large amounts of risk capital for small entrepreneurial businesses with good prospects but lacking established track records and meaningful collateral. Historically, and notwithstanding the establishment of the first venture capital companies as early as 1983 and government initiatives from 1988, investment in risk capital has been rather low. However since then, risk capital investments have increased from the very low levels of the late 1990s but aside an exceptionally large figure for 2005, they remain still below the investments levels of the leading countries<sup>17</sup> (Figures 25).

Figure 24. Access to loan capital on the basis of business plan



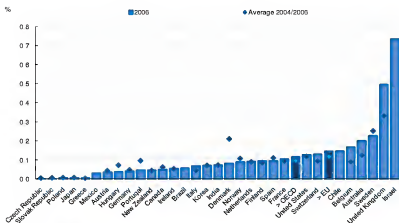
Note: the scale goes from 1-7, 1 is impossible and 7 is easy.

Source: The Global Competitiveness Report 2007-2008

<sup>16</sup> An inventory of policies toward international mobility of human resources in science and technology in 14 countries was recently assembled by the Ad Hoc Working Group on Steering and Funding of Research Institutions [DSTI/STP/SFRI(2008)1/REV1]. A similar exercise for Denmark could be useful as it would provide a good basis for a thorough review of the overall policy framework.

<sup>17</sup> In a small country such as Denmark annual figures can be strongly affected by exceptional individual transactions, hence very volatile. Generalizations on the basis of a single year's data should therefore be made cautiously. Napier (2008) cites a single large buy-out that contributed to a major increase in EVCA figures for total risk capital in 2005 and this appears to have influenced the total for early stage and expansion funding alone as well.



**Figure 25.** Venture capital as a percentage of GDP, 2004-2006

Note: Venture Capital includes Seed, Start-up, Early development and Expansion stages. Later stages and Buyouts are excluded, except for Mexico, Chile and Brazil. Total OECD excludes Luxembourg, Turkey and Iceland.

Source: OECD based on data from Thomson Financial, PwC, EVCA, LVCA and National Venture Capital Associations

2.27 The supply side of financing can explain the lower investments in risk capital in Denmark only to some extent. While institutions such as insurance companies and pension funds face quantitative restrictions which theoretically limit their investment in risk capital, the amounts invested in unlisted shares remain low and significantly below the legal ceilings (Baygan, 2003; OECD, 2005). Also banks are found to invest only small shares of their portfolios in these assets. Recently, the government signed a letter of intent together with some of the largest pension funds in Denmark with the aim to increase their involvement in risk capital activities<sup>18</sup>.

2.28 In 2006, the government made it also possible for private individuals to invest part of their pension savings in unquoted companies. The new investment possibility is open for private individuals with existing pension savings higher than 1 million DKK and allow for the investment above the 1 million DKK ceiling. This new investment possibility is expected to increase especially the investment in unquoted stocks.

2.29 Overall, the Danish government has not tried to imbed incentives to stimulate financing for entrepreneurial companies in wider and more general policy frameworks<sup>19</sup>. For example, while tax incentives could be used to make investments in risk capital instruments more attractive, primary importance has been attached over the years to maintaining a broad neutrality of the tax system. An

<sup>18</sup> Initial evaluations by the Danish authorities suggest that institutional investors have invested more in unquoted stocks but not only within but also outside Denmark.

<sup>19</sup> Napier (2008) lists fiscal incentives, administrative burdens, efforts to influence investment culture, regulation, internationalization, human capital, social capital and taxation as policy areas receiving "low attention" in the context of efforts to target the risk capital market.

exception is a small and limited tax incentive for institutional investors in the form of deductibility of 5% of their investments in companies listed on the new alternative market, *First North*.

2.30 Government intervention has often been more direct, with guarantees and direct funding, to stimulate the supply of financing for potentially high-growth entrepreneurial firms. In 1988 the *Danish Development Finance Corporation (DUF)* was established with a mix of private and public funding and benefiting from equity guarantees to provide risk capital. The *Business Development Fund* established in 1992 provided soft loans for early-stage companies and has since been restructured as the *Danish Investment Fund (Vækstfonden)* with a mission of providing seed and start-up financing for small innovative firms on commercial terms using equity or mezzanine loans (see chapter 3). An *Equity Guarantee Programme* covering half of the risks for subscribing venture capital companies was created in 1994 and its functions were transferred to the *Vækstfonden* in 2000. In 1998, six innovation incubators (*Innovationsmiljøer*) were created (there are now seven) to support small technology-based start-ups by leveraging public funds with private seed financing (see chapter 3).

2.31 The low level of entrepreneurial funding is argued to be mainly related to deficiencies on the demand side, i.e. some combination of too few businesses seeking funding and their lack of suitability. For instance, a survey of business angels from 2002 reported that 45 percent of business angels had only invested less than 10 percent of the capital they had set aside for risk capital investment (Napier, 2008). In addition, the significant allocation of Danish risk capital abroad (around 33% of the total in 2006) seems indicative of capital searching for profitable outlets that are not available in Denmark. But on the other hand, data from the European Venture Capital Association (EVCA) show that Denmark receives the highest share of inward investments in 2007 within Europe corresponding to 0.16% of GDP, approximately twice as much as outward investments (Vækstfonden 2008). As such, evidence for any “financing gap” is mixed and lack of opportunities seems only be a partial explanation for the relatively low level of risk-capital in Denmark.

2.32 The government has launched a number of initiatives to enhance the “investment readiness” to increase the number and quality of proposals for investment. In addition to the recent ‘Proof of Business initiative (see chapter 3), Business Angels networks have been strengthened. Business Angels offer practical know-how and help make entrepreneurs more worthy of financing. The Danish Business Angel Network (DBAN) was formed in 2001 within the *Vækstfonden* since they were largely centred around business incubators and research institutions. By 2002 there were estimated to be around 1600-1700 business angels in Denmark<sup>20</sup> (Napier, 2008; Baygan, 2003) and after three years the DBAN was privatised and moved into the Danish Venture Capital Association.

2.33 An important element in the financing chain is the ability of investors to exit from an investment once it has come to fruition. For small entrepreneurial businesses, this is usually the function of second-tier, or alternative stock markets which have easier listing requirements and rules, geared to the needs of young companies during their growth phase. This is an example of an area where a country such as Denmark may sensibly explore the scope for using international institutions rather than trying to sustain its own. Indeed, various attempts to create a successful second-tier market in Denmark have enjoyed rather limited success and in recent years efforts have been directed toward the broader Nordic region. In early 2003 the Nordic Growth Market, based in Sweden, established the Nordic OTC to create a region-wide platform for unlisted companies. This initiative has developed into *First North* which operates not only in Sweden and Denmark but also in Finland, Iceland and the Baltic countries. The launch of *First North* has strengthened the secondary stock market and is expected to further strengthen it in the future (Entrepreneurship Index 2007).

<sup>20</sup> Vækstfonden, cited by Napier *op.cit.* and Baygan, *op.cit.*

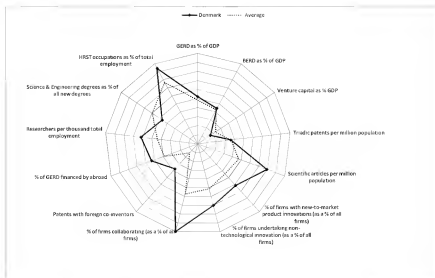
## 5. Research, development and technology

2.34 Indicators of innovative activity for Denmark have strengthened since the mid-1990s, creating overall favourable conditions for entrepreneurs on R&D and technology. Private research and development (R&D) has picked up sharply to a level above the OECD and EU averages and science indicators (patents, scientific articles and citations) have shown above average growth for Denmark (Figure 26). Also product and process innovation is fairly high by international standards: Denmark compares well to other OECD countries with respect to in-house product and, particularly, process innovation, and 70% of large firms have introduced non-technological innovations (OECD, 2008 forthcoming).

2.35 Denmark has a large human resources base in science and technology. Occupations involving human resources for science and technology account for over 35% of total employment and there are more than ten researchers per 1 000 total employment. However, problems are emerging upstream, as skills formation appears inadequate to meet requirements: proficiency in science among 15-year-olds is relatively low, despite spending on education that is among the highest in the OECD area and the number of science and engineering degrees as a share of new degrees is below the OECD average and decreasing (OECD, 2008 forthcoming).

2.36 According to the 2005 Economic Survey, Denmark also underperforms in realising the commercial benefits of research, especially publicly funded research<sup>21</sup>. There is a general feeling about a weak cooperation between the business and public sectors, although in science and innovation the interaction between government and industry differs depending on the indicator: cross-funding of R&D is low, but a relatively high 30% of large firms collaborate with higher education institutions.

<sup>21</sup> See pages 19 and 40; *OECD (2005), Economic Surveys: Denmark*.

**Figure 26.** Denmark's profile in R&D, technology and innovation

Source: OECD, STI-Outlook (forthcoming 2008)

2.37 The *Globalisation Strategy* envisaged an important role for science and technology in strengthening the innovativeness and growth potential of Danish companies. This encompasses initiatives in the fields of education, research, entrepreneurship and innovation:

- Strengthen R&D. Publicly financed expenditure on R&D should be raised to 1% of GDP by 2010 and private R&D should be encouraged by better framework conditions with a view to raising the national total to 3% of GDP.
- Reform the public research system to improve the quality and efficiency of research spending. To this end at least 50% of public funds for R&D should be allocated on the basis of open competition based on quality criteria. The share of funds allocated to longer term and strategic projects is to be increased.
- Close relations between companies and universities should contribute to more rapid dissemination of public sector research results to the business community.

2.38 The action plan *InnovationDenmark 2007-11* puts forward 70 concrete recommendations and foresees a budget of 400 million EUROS. The objectives of the plan are to make Danish firms more and consistently innovative and to strengthen the knowledge sharing, interplay and collaboration between research and enterprise. The plan aims to promote and enhance innovation by creating a better framework for private-sector research, quality public research and more robust linkages across the innovation system. Several tools are developed for realising these objectives like technology service centres, innovation

incubators, innovation consortia, innovation interaction projects, etc. those directly impacting entrepreneurship are further discussed in detail in Chapter 3 (see also Box 3).

### Box 3. InnovationDenmark

In order to strengthen the innovativeness of Danish firms including SMEs, new innovation-promoting/supporting instruments and the approved technological services for SMEs are developed. Initiatives to streamline knowledge dissemination, to make the innovation system more demand-oriented and to ensure easy access to government initiatives for promoting innovation are implemented. As part of the Globalisation Strategy, the User-Driven Innovation program has been launched to stimulate firms and public institutions to tap into the innovation potential of users and customers.

Initiatives for the public sector research aim at instilling quality as a key principle. Reforms in the university sector have been undertaken, including the merger of some universities and research institutions. To reduce dispersion of work and give more strategic coherence to publicly funded research at universities, grants are being increased to cover costs more fully and a proportion is being allocated to universities themselves on the basis of proposals for larger-scale, longer-term projects, rather than to individual researchers. A special grant pool has been established to finance cross-cutting research too large for only one institution. Furthermore, the *Globalisation Strategy* envisages that research-intensive private companies should have more opportunities to compete for research funds on even terms with public research institutions.

To better prioritise strategic research, regular broad-based surveys are envisaged to identify both research needs and the capacity of Danish institutions to respond to them. The *Globalisation Strategy* proposes that research programs be more systematically subject to evaluation to ensure that research funds are allocated according to quality based criteria.

The interaction between public research and industry is strengthened by increasing investment in knowledge dissemination in general and by fostering the commercial use of public research. From 2008 innovation vouchers for Danish SMEs (see chapter 3) and the 'double-up' initiative with the aim of promoting co-financed research projects between SMEs and academic and research institutions have started. Existing innovation consortia are strengthened and stronger networks between enterprises and academic and research institutions are promoted. Furthermore, the government opened innovation centres in Silicon Valley, Shanghai and Munich (see chapter 3) to promote the access of Danish clusters to foreign knowledge, networks, technology, capital and markets.

To encourage better commercialisation of research results, measures such as for example allocating funds on an open competitive basis are foreseen. Matchmakers will try to strengthen collaboration and new initiatives have been undertaken to stimulate the technology transfer between universities and the private sector (for example proof-of-concept; see chapter 3). The industrial Ph.D. initiative which encourages students to divide their time between an enterprise and the university will work to reduce barriers between the two sectors. This could be extended to cover more experienced staff, now limited to a pilot scheme within SMEs<sup>22</sup>.

The government also launched an initiative to create a market place for trading in intellectual property rights such as patents and trademarks, which should help the diffusion of research. By 2007 more than 1/3 of Danish companies possessing tradable intellectual property, around 3200 companies, had engaged in some trading. In addition, the Danish Patent and Trademark Office has taken initiatives to provide guidance to new businesses about the legal framework surrounding intellectual property rights, an area in which new businesses are often at a disadvantage in light of its complexity.

2.39 A good information and communications technology infrastructure, in particular access to broadband internet systems, is crucial for the innovativeness and more general to the competitiveness of (new) firms in today's global economy. Telecommunications networks in Denmark are good and key

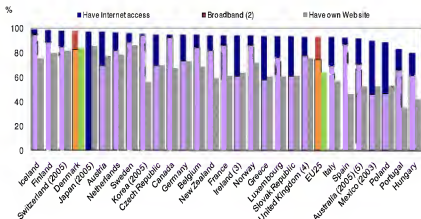
<sup>22</sup>

Except for the Nordic countries and Belgium, only limited (official) data are available on the so-called inter-institutional mobility (movement between employment in the university, research and business sectors). Future OECD activities are foreseen in this domain.

indicators such as business use of the internet place Denmark among the world leaders in participating in the digital economy (Figure 27 and 28).

**Figure 27.** Business use of the Internet and websites, 2006

As a percentage of businesses with 10 or more employees<sup>1</sup>



1. For most European countries, the following industries are included: Manufacturing, Construction, Wholesale and retail, Hotels and restaurants, Transport, storage & communication, Real estate, renting and business activities and Other community, social and personal service activities. For Australia, Agriculture, forestry and fishing, Education and Religious organisations are excluded. For Canada, Agriculture, fishing, hunting and trapping, and Construction - specialist contractors are excluded. For Japan, data refer to enterprises with 100 or more employees and exclude: Agriculture, forestry, fisheries and Mining. Korea includes: Agriculture & Fisheries, Light Industry, Heavy Industry, Petrochemicals, Construction, Distribution, Finance and Insurance, and Other services. For Mexico, data refer to enterprises with 50 or more employees and include: Manufacturing, Services and Construction.

For New Zealand, data exclude Government administration and defence, and Personal and other services, the NZ survey also excludes businesses with fewer than 6 employees (calculated by Rolling Mean Employment) and those with turnover of less than NZD 30 000. For Switzerland, data refer to enterprises with 5 or more employees, and include Manufacturing, Construction, Electricity, gas, water, and Services industries.

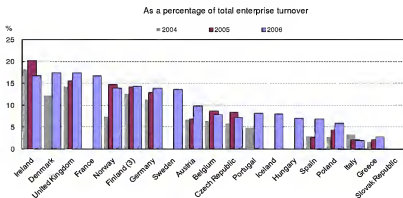
2. Most countries define broadband in terms of technology (e.g. ADSL, cable, etc) rather than speed.

3. Includes all of NACE 92.

4. Includes all of NACE 55.

5. Website includes a presence on another entity's website.

Source: OECD, ICT database and Eurostat, Community Survey on ICT usage in households and by individuals, April 2007.

**Figure 28.** Percentage of enterprises' total turnover from e-commerce, 2004-06<sup>1,2</sup>

1. Enterprises in the following industries are included. Manufacturing, Construction, Wholesale and retail, Hotels and restaurants, Transport, storage & communication, Real estate, renting and business activities, and Other community, social and personal service activities.

2. Total sales via the Internet or other networks during reference year, excluding VAT.

3. For 2006, networks other than Internet: only EDI.

Source: Eurostat, Community Survey on ICT usage in enterprises, April 2007.

## 6. Product market conditions

2.40 Denmark is a small economy operating as part of the European Union (governed by the various provisions of the Single Market) which in turn operates within the WTO framework. As such, product markets are generally open and highly competitive. A consequence of this is that much of the policy framework affecting Danish markets lies outside the direct control of policy makers in Denmark. Trade rules are obviously designed internationally but there are also a number of policy areas that have been ceded in whole or in part to the European Union, notably competition policy. The resulting framework is not distortion-free – agriculture is a notorious problem area – but overall Danish enterprises operate on largely non-discriminatory terms with good access to very large and liberalised international markets. All this makes for a product market environment that provides ample opportunity for Danish entrepreneurs.

2.41 There are some areas subject to policies formulated at the national level that merit some attention. The most recent Competition Report (Danish Competition Authority, 2008) indicate that the pressure of competition in Denmark has improved slightly from 2000-2005, but that Danish prices are still relatively high. Adjusted for indirect taxes and cost of living, Danish consumer prices in 2006 were approximately 8% higher than those of other EU countries (Table 4). Among other things, these price differences relate to less intense competition in Denmark, which in turn is due to access barriers, price regulation and limitation of number. Anti-competitive restrictions and lack of (international) competition can be especially damaging to new enterprises trying to establish themselves as they may reflect entry barriers and can result in high costs.

**Table 4.** Nett prices for goods and services, 2008 (EU9 = 100)**High Price Items**

Miscellaneous goods and services	128
Hotels and restaurants	124
Health	121
Bread and cereals	118
Recreation and culture	117
Alcoholic Beverages	116
Other foodproducts	116
Personal transport equipment	115
Oils and fats	113
Housing, water, electricity, gas and other fuels	112
Transport	110
Household furnishing, equipment and maintenance	110
Meat	107
Clothing and footwear	106
Fish	101
Fruits and vegetables	101
Milk, cheese and eggs	100

**Low cost Items**

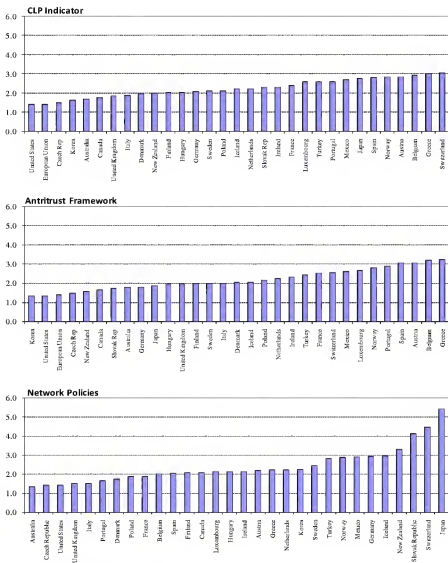
Tobacco	96
Communication	86

Source: Konkurrencerådgørelse 2008

2.42 Nevertheless, Denmark shows a good overall performance in internationally comparing competition policies (Figure 29). The OECD Competition Law and Policy (PLC) indicator summarises and compares competition policies across OECD countries encompassing actual application as well as formal legal and institutional structures and including both general as well as sector-specific competition policies (Høj et al, 2007). Policies are separated into those enhancing competition in general and which are typically enforced by the competition authorities (antitrust framework), and those encouraging competition in deregulated network industries, which are typically implemented by more or less independent sector regulators (network policies).



Figure 29. The Competition Law Indicator and its main subcomponents



Source: Høj et al. (2007)

2.43 During the first half of this decade Denmark has substantially harmonised its competition law with EU rules and this has resulted in a regulation that is less anti-competitive than in other countries. Only a couple of countries had overall a less anti-competitive regulation than Denmark, although some problems still exist in specific domains (*e.g.* retail trade).

2.44 'Competition' objectives of the Danish government are that:

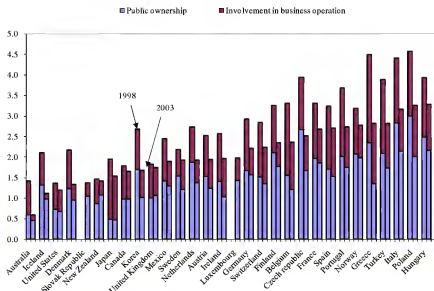
- In 2010, competition in Denmark should be on par with the best OECD countries, and the number of business sectors characterised by inadequate competition should be halved. In this respect a committee has been appointed to assess the merger control in Denmark, in order to develop an equally efficient merger regulation as in other countries.
- In 2010, the municipalities should subject 25% of their functions and services to competition. Especially this second objective means a sharp increase in the contestability of public services.

2.45 Denmark has a large public sector which provides nowadays a wide range of public services, spending more than 25% of Danish GDP (Konkurrenceevneredegørelse, 2008). It is important that the public sector does not undermine the business environment with anti-competitive behaviour that discourages entrepreneurial efforts. Competition issues in the public sector relate to decisions to *fund* rather than to *provide* services, including outsourcing, free choice, terms of government participation in competitive markets, privatisation and state aid. For new and growing businesses, public procurement can often be an important source of business; the share of public purchases as regards EU procurement in Denmark is lower than in the EU.

2.46 Since 2005 there has been modest progress on opening markets to private providers, notably child care centers, and partial privatisation (postal services, gas). The use of private hospitals as part of the fulfillment of the guarantees of treatment can also be mentioned. In addition, for orders above DK 500 000 but below thresholds for EU rules on tendering, local governments now announce their requirements publicly before entering into contracts, which allows interested providers to respond.

2.47 Public intervention through public ownership of firms and public involvement in business operations is rather low when comparing Denmark with other OECD countries (Figure 30). Denmark has seen a significant progress the last decade, as public ownership has been reduced in a number of industries (*e.g.* telecommunications) and the government has decreased its strategic participations in publicly-owned companies.

Figure 30. Indicator of state control



1. These indicators are part of the indicators of product market regulation (PMR) which are discussed in detail in Conway et al (2005). Note. There are no 1998 observations for Slovak Republic and Luxembourg.

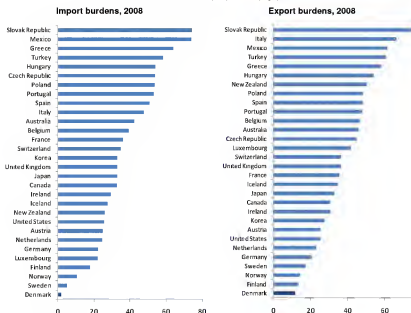
Source: Hoj et al (2007)

2.48 Network industries, notably power and telecommunications, are particularly important elements of a modern business environment, particularly for new businesses operating internationally and developing products based on new technologies. Denmark's overall approach to these industries was to unbundle the networks, regulate the monopoly parts and subject the rest to competition. Competition was assessed to be very present in telecommunications, "to some extent" present in electricity but insufficiently (at best) gas, water supply and passenger rail (OECD, 2005). Since 2005 some further progress has taken place in electricity but elsewhere it seems to have been rather limited.

2.49 Not only access to the domestic market is important, but because of the small size of Denmark, access to foreign markets is primordial for growing entrepreneurial firms. In addition, the emergence of global value chains necessitates the importing of goods and services for further production and value creation. Indicators on import and export burdens measure the administrative burden (number of documents, signatures and the time necessary to comply) show that importing to and exporting from Denmark is relatively easy (Figure 31).

**Figure 31. Import and export burdens**

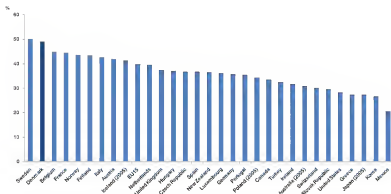
Normalised from 0 (low) to 100 (high)



Source: World Bank, Doing Business database, ed 2008

## 7. Regulatory framework: social security and tax systems

2.50 Especially motivated by social solidarity considerations, Denmark enjoys one of the highest levels of public spending on income support and public services in the OECD through very high tax incomes (Figure 32). The result is a very even income distribution as low incomes are supplemented with public support in various ways while high incomes face very high marginal tax rates. This broad framework and corresponding high tax levels may however act as a disincentive to entrepreneurial activity since it adversely affects the risk/reward balance from such activity.

**Figure 32.** Tax revenue as a percentage of GDP, 2006

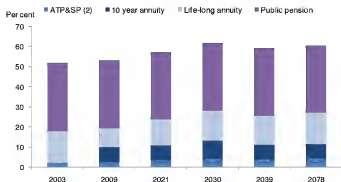
Source: OECD, Revenue Statistics database, 2008.

### Social security benefits

2.51 In some countries, one way social support systems can discourage entrepreneurship by defining eligibility conditions dependent on formal employment or by explicitly excluding people engaged in entrepreneurial activity. In the case of Denmark, as regards access to health care, universal public health insurance provides all residents with publicly financed health care, so nothing in the health care should discourage entrepreneurial activity. Most public services and income support measures for people of working age are equally available to people engaged in entrepreneurial activity and employed workers.

2.52 The retirement pension system seems however to be less benign. The current Danish system is composed of the public pension system (*folkepension*) and a defined contribution system of insurance pensions built around collective agreements which cover around 73% of the working population. Entrepreneurial activity should entail no risk with regard to rights under the basic universal scheme, whose benefits largely depend on years of residency rather than contributions and whose benefit structure is highly progressive.

2.53 However, the system may be perceived as a significant sacrifice for entrepreneurs who opt out of the supplementary insurance system under which 2/3 of contributions in the range of 9-17% are paid by employers. Alternative arrangements are however available for such individuals since they can purchase a pension product. But, with contributions voluntary and no equivalent to the employers' contribution, the pressures of making an entrepreneurial project succeed may limit the entrepreneur's ability to accumulate pension assets. These supplementary pensions are expected to rise steadily in importance until around 2030 when they will be nearly as important as the public pension as a source of retirement income, so the potential sacrifice may be considerable (Figure 33).

Figure 33. Gross pension income<sup>1</sup>

1. Received by the average person in retirement relative to average gross personal income for the 25-84 year olds.  
 2. Labour market supplementary pension and Special Pension Savings schemes.

Source: Danish Welfare Commission, as reported in *OECD Economic Surveys: Denmark, 2008*.

### *Impact of taxation and social charges on incentives*

2.54 Business taxation is in most countries a lesser impediment to entrepreneurship especially in the initial stages since start-ups and businesses in their early growth phases often have a too little taxable income to be severely impacted by corporate taxation. The abolition of a time limit for the carry-over of losses incurred in 2002 and afterwards reflects an effort to design the business tax framework to take account of the problems that new businesses regularly face. The corporate tax rate of 25%<sup>23</sup> in Denmark is quite competitive in international terms (Table 5), although the tax rate for SMEs is significantly higher than in some other countries. Also the complexity of the business taxation schemes seems not to create major problems. In sum, business taxation in Denmark does not seem to pose major problems for encouraging entrepreneurship.

<sup>23</sup>

The 25% corporate tax rate is well below personal tax rates, meaning that incorporation could serve as a tax shelter for small businesses even though the combined corporate taxation and the taxation of dividends and capital gains at the personal level equals the marginal personal tax rates – thereby preventing huge benefits from income shifting.

**Table 5.** Corporate Income Tax Rates, 2007

(Combined central and sub-central statutory tax rates, in per cent)

<i>Country</i>	<i>Tax rate</i>
Australia(1)	30
Canada	36.1
Denmark	25
Finland	26
France(2)	34.4
Germany(3)	38.9
Ireland	12.5
Italy (4)	33
Japan	39.5
Korea	27.5
New Zealand(1)	33
Norway	28
Sweden	29
Switzerland(5)	21.3
United Kingdom(1)	30
United States(6)	39.3

1. Fiscal year beginning 1 July.

2. Includes a surcharge but not the local business tax.

3. Includes the regional trade tax and a surcharge.

4. Regional business tax not included.

5. Includes church taxes, as calculated by the Swiss Federal Tax Administration.

6. Sub-central rate is a weighted average of state marginal rates.

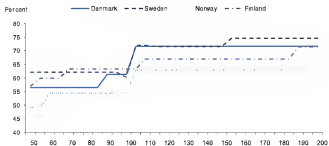
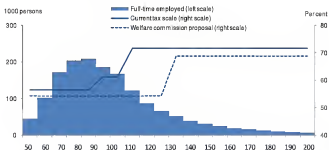
Source: OECD.

2.55 A much larger issue however is the impact of the personal tax system, which consists of labour market contributions<sup>24</sup>, a municipal income tax and a health contribution, on incentives for entrepreneurship. In addition a progressive state (*i.e.* national) income tax is levied whose top marginal rate rises to 26.5%<sup>25</sup>. As a result, the “marginal tax wedge”<sup>26</sup> for workers in the top tax bracket, which in Denmark becomes effective only slightly above average full-time earnings, is one of the highest in the OECD area (Figure 34). Even at income levels as low as half of the full-time average, the wedge exceeds 55% and compares unfavourably with countries such as Australia, Norway and the United Kingdom.

<sup>24</sup> These are similar to what many countries call social security contributions or taxes.

<sup>25</sup> One should however take into account the job allowance which was recently raised from 2.5 to 4%.

<sup>26</sup> Taking into account consumption taxes.

**Figure 34.** Marginal tax rates in selected countries**A.** For persons with income at 50-200% of average full-time earnings, 2005<sup>1</sup>**B.** For persons with income at 50-200% of average full-time earnings, 2005<sup>1</sup>**C.** Danish marginal tax rates and distribution of full-time employed

1. Marginal income tax rate plus employee and employer contributions and indirect taxes, for a single person with no children.

Source: OECD, Taxing Wages Database; Welfare Commission.



2.56 This wedge measuring the difference between what the employers pays and what the employees receive, reduces significantly the rewards of working in general and entrepreneurship specifically. The Welfare Commission proposal to reduce taxes is expected to improve matters, but mainly for incomes between 85 and 125% of the full-time average. It would have little impact on low incomes or on the higher incomes which create much of the incentive for entrepreneurial activity. Even with the proposed reductions, the marginal tax wedge would remain approximately 70%. In addition, capital income outside the pension system is mainly treated as ordinary income in Denmark, although income on shares, including capital gains, is subject to a separate regime with rates that, while still high, are generally below ordinary tax rates<sup>27</sup>. An independent tax commission is scheduled to present their report in February 2009 on new models for a tax-system safeguarding incentives to put in extra working efforts. This should among other things include a reduction of the marginal tax.

### *The international dimension*

2.57 The effect of the tax system on the ability to attract and retain skilled, internationally mobile people is crucial for entrepreneurship in a global economy, as these are often specialised persons essential to new and rapidly growing enterprises. Salaries and remuneration of such people, Danish as well as foreign, are largely set in an international marketplace and efforts to attract and retain them must take this into account if they are to be successful.

2.58 The high Danish taxation of even moderately above-average earnings seems to affect Denmark negatively. Separating the influence of taxation from other forces operating on international movement is difficult, but a recent study concludes that taxation plays an important role in determining both where Danish migrants go and where migrants to Denmark come from (Nielson, 2007).

2.59 The tax code in Denmark includes an option for approved researchers and key employees recruited abroad to 'opt out' of the ordinary income tax system for three years in favour of paying a flat 25%. While this is a step toward addressing the problem the scheme seems to be rather narrowly conceived to be very effective and more general approaches may be warranted. Most obviously, while it addresses the problem of attracting skilled foreigners, it provides little help in retaining skilled Danes who might be tempted to migrate. In addition, the three year limit necessitates more staff turnover than may be desirable and in any case works against anyone taking a longer term view and investing time accordingly.

### *Wealth taxes and estates*

2.60 Denmark has reduced in recent years the negative consequences of wealth and estate taxes on entrepreneurship. The wealth tax, which acted as a disincentive to risk taking and increased the cost of capital, was completely abolished in 1997. However, some other asset taxes are very high as a broad tax base is necessary for the high level of social spending. Denmark is not unique in taxing capital at high rates (noted above) but this contrasts with a number of countries that offer more favorable treatment<sup>28</sup>.

2.61 High taxation of estates, gifts and bequests may not discourage entrepreneurial activity by the living but they must be structured carefully to ensure that they do not make it difficult to reap the benefits of entrepreneurship by forcing the dissolution of successful small businesses on the death of the founder. In recognition of this problem, Danish law provides for the possibility of deferral of capital gains tax on

<sup>27</sup> The first EUR 6100 of capital gains on domestic equities are taxed at 28%; the next EUR 7600 at 43%; and anything more at 45%. After taking account business taxation it is doubtful that income from shares is privileged by the tax system, notwithstanding lower personal tax rates. For a detailed discussion of taxation of taxation of pensions and other taxable income in Denmark, see OECD (2008a), pp.184-191.

<sup>28</sup> Personal taxation of capital gains varies greatly across countries. See Table 13 in Weichenrieder (2007).

assets in estates which include small businesses. In such cases the potential tax is evaluated and deducted from the value of the estate. This reduces the taxation of the bequest and reduces, but does not eliminate, the possibility that the business will be liquidated to facilitate payment of the tax. The conditions under which the tax authorities will accept this treatment were relaxed in 2002.<sup>29</sup>

## 8. Regulatory framework: other issues

2.62 Regulations in many forms, usually designed for social, environmental, or other not-strictly-economic purposes, often entail costs which business enterprises must absorb. Particularly where complexity and high compliance costs are important these can disproportionately discourage entrepreneurship since small growing businesses often have neither the management time nor the specialised expertise to deal with them. It is important therefore that regulation is of high quality so that the benefits to citizens' well-being is not outweighed by collateral, and often hidden, costs elsewhere. Given the pervasiveness of regulation and the frequency with which regulations are modified, the process by which they are designed, reviewed and issued is at least as important as the effect of any specific set of regulations.

### *Process for ensuring high quality regulation*

2.63 Good regulatory practices to ensure high quality regulation must be institutionalised throughout the public sector if they are to be successful. These include capacities to judge when and how to regulate effectively, transparency, flexibility, ability to coordinate policies across agencies, understanding of markets and responsiveness to changing conditions. Of particular importance is a readiness to base policies on regulatory impact assessments (RIAs), which can take many forms such as cost-benefit analysis or cost-effectiveness analysis. Whatever the form of such assessments, they should contain certain basic features: quantified benefits, quantified costs and consideration of alternatives to the regulation under consideration.

2.64 The institutional framework for regulatory reform in Denmark was reviewed by the OECD in 2003<sup>30</sup>. It was found to be firmly grounded in these broad concepts of regulatory quality, to enjoy broad support across the political spectrum, and to be well integrated across the various ministries and agencies across the administration. In particular, a high-level Regulation Committee supported by its own secretariat and a parallel network of officials at working level works well to coordinate, promote and focus reform efforts. Priority was at first directed toward regulations incorporated in primary laws, rather than the lower-level rules which impinge directly on day-to-day operations of the business sector [and the review recommended that focus be shifted in this direction].

2.65 The main area cited for improvement was "The relative underdevelopment of regulatory impact analysis". Specific attention was drawn to the need to improve, gradually, the quantification of RIA and to apply it to existing, as well as proposed new, regulations. Policy proposals were then:

- "Increase accountability for reform results within Ministries by establishing a systematic process of oversight by a ministerial committee, such as the Economic Committee of the Cabinet, and by

<sup>29</sup> When succession is accepted by tax authorities the new owner can step into the position of the previous owner without paying the normal capital gains taxes that are liable to realized capital gains on assets. Previously succession was not allowed if more than 25 per cent of the firm revenues (average for the three preceding years) originated from financial transactions or from real estate activities. This threshold was raised to 50 per cent in 2002.

<sup>30</sup> *Government Capacity to Ensure High Quality Regulation*, OECD, 2003. All quotations in this section are from the Executive Summary of this review.

setting broad targets for reform in high priority areas, against which ministries will be accountable.”

- “Adopt the principle of good regulation accepted by Ministers in the 1997 OECD Report on Regulatory Reform that regulations should be adopted only if costs are justified by benefits.
- “Improve the value of regulatory impact assessments for policy officials by adopting the benefit-cost principle, gradually increasing the rigor of analysis for important regulations, expanding its scope to apply to lower-level rules, and requiring ministries to include RIA in public consultation processes.”
- “Implement a targeted program of review of existing laws and lower-level regulations, including regulation at municipal levels.”
- “To reduce the risk that informal practices will result in insider/outsider problems in which some groups have less access than others, continually monitor the use of public consultation and social partnership arrangements at all levels of government to ensure that they are consistently transparent and accessible to all affected stakeholders.
- “Apply reform disciplines to lower level rules as well as legislation.”

2.66 Some work has been done in these areas since 2003. Regulatory reform in Denmark is currently under review again by the OECD. Preliminary results will be available by the end of 2008.

#### *Starting up a new business*

2.67 If specific regulations are not well-designed, they often pose special challenges to the rapid growth or even survival of small businesses. World Bank *Doing Business* rankings place Denmark very favourably in comparison to other OECD countries (Table 2.4) and 3<sup>rd</sup> overall (behind New Zealand and the United States). The same observation comes out of the OECD Index of Administrative Barriers to Entrepreneurship: Denmark performs better than OECD and EU averages, but is generally slightly more restrictive than the English-speaking countries (Figure 35).

**Table 6.** Denmark's ranking on ease of doing business among 24 OECD countries

(Rank from 1 to 24, with first place being the best)

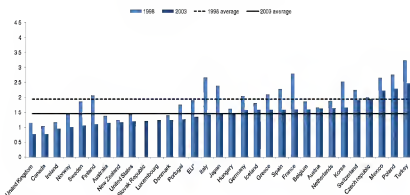
Starting a business	10
Dealing with licenses	2
Employing workers	3
Registering property	13
Getting credit	8
Protecting investors	9
Paying taxes	4
Trading across borders	1
Enforcing contracts	18
Closing a business	6
<b>Overall: Ease of doing business</b>	<b>3</b>

Source: World Bank, *Doing Business* database, ed. 2008.

2.68 Administrative and financial burdens associated with starting a business in Denmark are limited. A number of initiatives have been taken in recent years to improve matters: in 2006 the registration of a

new business has been simplified so that only one registration is necessary. The abolition of the requirement that the entrepreneur put up collateral of DKK 125 000 is currently under consideration. On average, it takes only 5 days to start a new firm in Denmark, while the OECD average is 17 days. Other new initiatives concern the simplification of tax compliance some e-government initiatives that have simplified reporting.

Figure 35. Barriers to entrepreneurship



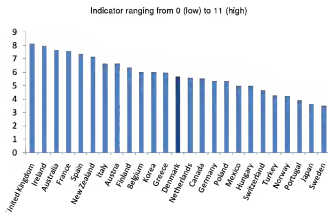
\* EU 15 (simple average).

Source: P. Conway, V. Janod and G. Nicoletti, "Product Market Regulation in OECD Countries: 1998 to 2003", *OECD Economics Department Working Paper 419*, 2005 [ECO/WKP(2005)6].

### Bankruptcy arrangements

2.69 Bankruptcy arrangements that are relatively lenient towards debtors have advantages in terms of reducing the costs of failure and hence the risks facing potential entrepreneurs. These advantages must be weighed, however against their influence on availability of capital which may suffer from lower creditors' rights. Most important is that a system exists which deals with problems clearly, fairly and expeditiously. *Doing Business* rates Denmark highly on "Closing a business", i.e. 6<sup>th</sup> in the OECD, after Japan, Canada, Ireland and two Nordic countries.

2.70 Recent government initiatives have eased the possibility of debt rescheduling and lowered the time for closing insolvent estates (Entrepreneurship Index 2007). The intention is to facilitate reorganisation (as alternative to liquidation) and restart firms following bankruptcy, as the possibilities for a fresh start are somewhat lower in Denmark compared to other countries (Figure 36). In addition, the Early Warning Scheme has been established offering counselling for financially distressed firms (see chapter 3). A policy evaluation of the recent introduced initiatives should be considered in the near future in order to assess the effectiveness of these measures.

**Figure 36.** Possibility for a fresh start, 2005

Source: OECD (2006), *Entrepreneurship Policy Indicators for Bankruptcy Legislation in OECD member and non-member countries*

### **Health, safety, environmental and product regulation**

2.71 Ill-designed or overly complex regulation can generally become burdensome for small businesses aiming to grow rapidly. Danish authorities have recently taken some initiatives to ease burdens on small businesses in the domain of health, safety and environment. In particular the requirement for a safety board for companies with 5 to 10 employees was abolished in 2002 unless an unusually severe safety risk exists. In addition the further development of the compulsory health scheme has been stopped by exempting 80 000 trade and service companies (and many potential new ones) from some administrative requirements.

### **Labour market regulation**

2.72 Over the years Denmark has developed the so-called *Flexicurity* approach to avoid restrictions and distortions in the labour market resulting high unemployment. It trades off the costs of very high levels of social spending and taxation against the benefits of allowing market forces and disciplines to play in labour markets. The system give employers large flexibility as regards hiring and firing while providing workers security through generous benefits, retraining efforts and incentives to return to work. It is reflected in Denmark's favourable ranking in *Doing Business*, 3<sup>rd</sup> in "Employing workers" after the United States and Australia; only the number of administrative burdens for hiring a first (foreign) employee and relative rigidity of working hours compare less to some other countries (Entrepreneurship Index 2007). A good framework as regards staffing is especially important for rapidly growing small businesses, since taking on labour to expand can be very damaging in the event of the need to retrench or restructure if reductions in payrolls are expensive or impossible.

## **9. Cultural attitudes towards entrepreneurship**

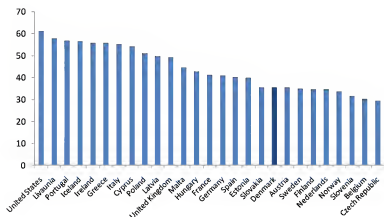
2.73 Denmark is a small country characterised by a high level of cohesion and a low level of inequality based on a large welfare state and a high level of taxation notably on personal income (see above). Denmark's working culture has traditionally been shaped by the rights and welfare benefits associated with employment. In addition, the celebration of entrepreneurial success was not traditionally

anchored in Danish culture due to the prevalence of the so-called “Jante-law” which condemned the attempt of an individual to do better than others.

2.74 Assessing the existence of an entrepreneurial culture is a difficult exercise, as it often relies on surveys which do not always allow international comparability. The results of the 2007 Entrepreneurship Survey (EU-25, United States, Iceland and Norway) show that Denmark like most European countries does not possess a real entrepreneurial culture. Thirty-five percent of the surveyed Danish persons prefer to become an entrepreneur instead of working as an employee. With this share of individuals favouring self-employment Denmark comes out just below the median position regarding (Figure 37).

**Figure 37. Entrepreneurship intentions**

Share of respondents that prefers being self-employed over being an employee



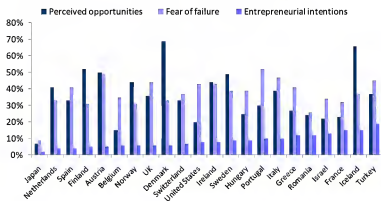
Source: EU – Flash Barometer (2007): Entrepreneurship Survey of the EU (25 Member States), United States, Iceland and Norway

2.75 The yearly expert survey undertaken by the Global Entrepreneurship Monitor (GEM) indicates that the esteem of entrepreneurial activity has increased in Denmark in the past five years. The GEM survey additionally highlights that the Danes see a lot of opportunities for entrepreneurship and that the fear of failure is relatively low (Figure 38). The same observations come clear in the above mentioned EU-survey: Denmark scores relatively well in opportunity recognition and risk-taking behaviour.

2.76 Nevertheless, the entrepreneurial intentions remain low in Denmark and for the first time in 5 years the rate of prospective starters has decreased in 2007 (GEM survey). This may be explained by the relative good conditions on the Danish labour marked with relatively short working hours and decent salaries, combined with the above mentioned tax system acting as a disincentive for starting a business. This is confirmed by the 2007 Entrepreneurship Survey which looks into the reasons why people prefer being an employee instead of becoming self-employed and starting their own business. The Danes as most other Europeans who did not want to become self-employed mentioned the fixed salary as a reason for being an employee. In addition significantly more Danes referred also to working hours as impediment for being self-employed.

2.77 Low entrepreneurial intentions appear also to exist specifically among young Danish people. A survey undertaken by the French Foundation for political innovation in collaboration with the Swedish Institute Kairos in 2006 on youth (16-29 years old) in 17 countries showed that the young Danes are comparatively optimistic about their future (60%) and that they believe strongly in their independence (70%). These two factors did not however translate in a high entrepreneurial spirit, as only 18% of the surveyed saw themselves starting up a business in the next 15 years.

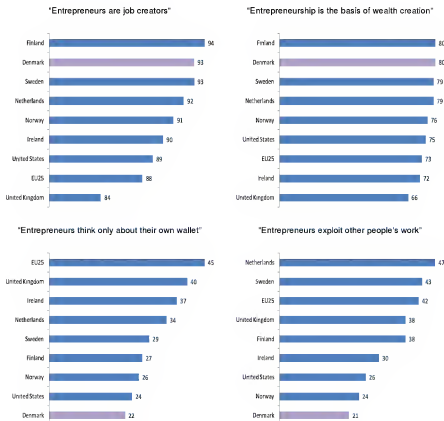
**Figure 38.** Perceived opportunities, fear of failure and entrepreneurial intentions, 2007



Source: Bosma et al., 2008

2.78 The perceived image of entrepreneurs is strongly positive in Denmark, more positive than in most other European countries (Figure 39). The most widespread notion about entrepreneurs is that they are job creators, followed by 'entrepreneurship is the basis of wealth creation, benefitting us all'; these positive connotations are very present in Denmark. Significantly few people agree with negative statements about entrepreneurs (2007 EU Entrepreneurship Survey).

2.79 Culture can be affected by the media, the school system and lots of other factors. As such, it is possible for governments to affect the culture through support of events and media-coverage, the creation of role models, through the education system and by the creation of good general framework conditions for entrepreneurship. The Danish government has done some work in these areas by supporting TV-shows and national events, enhancing focus on entrepreneurship in the educational system and the establishment of the Danish Foundation for Entrepreneurship and Culture in 2006. In 2008 the DECA acts as the national host for the Global Entrepreneurship Week, which is an international campaign to promote entrepreneurship.

**Figure 39.** Perceptions of entrepreneurs (in percentages of surveyed persons)

Source: EU – Flash Barometer (2007): Entrepreneurship Survey of the EU (25 Member States), United States, Iceland and Norway

## 10. Concluding remarks

**2.80** The foregoing discussion highlighted the strengths of the Danish economy: the overall picture shows a well-designed economic policy framework, a healthy business environment and a high productivity economy that has delivered good employment performance and high living standards. Many elements of this framework are conducive to entrepreneurial activity and supportive of rapid growth of successful new businesses. Of particular importance in this regard, Denmark has been more successful than many countries in keeping regulatory red tape and restrictions on freedom to manage staff levels and payrolls to a reasonable minimum. Initiatives envisaged in the government's *Globalisation Strategy* have the potential to strengthen the environment further.



2.81 The major area where the framework conditions in Denmark work against entrepreneurial activity is the impact of high and progressive taxation on risk/reward trade-offs that influence incentives. There are probably limits to what can be done here, since there is strong public support for Denmark's high level of public spending, which is motivated by considerations of social solidarity and contributes to the high degree of equality of income and wealth in Danish society. Given the overall tax levels this requires, high marginal tax rates are difficult to avoid unless major distortions to the tax system are to be introduced. These high marginal tax rates affect in the first place successful entrepreneurs and may hinder the effective realisation of the growth potential of young entrepreneurial firms. To the degree possible, measures to mitigate the disincentives generated by high taxation would be helpful.

2.82 The issue of taxation is also particularly important given its influence on the international mobility of talented and highly skilled people who often have options readily available elsewhere. Since human resources are essential contributors to rapidly growing, high productivity enterprises, Denmark must ensure its ability to attract and retain the highly skilled. Denmark is a small part of an open and increasingly integrated international economy, so such people are likely to include both Danish citizens and people who must be attracted from other countries. This ability to attract and retain skilled human resources, which may involve making Denmark more welcoming to potential immigrants, is an important element of making Denmark a more entrepreneur-friendly base of operations.

2.83 Another domain in entrepreneurship policy that should receive large attention in Denmark is entrepreneurial education: the formation of entrepreneurial capabilities on the different levels (primary, secondary and higher education) seems less developed in Denmark compared to other countries. Several policy initiatives have been developed recently (see Chapter 3): it will be important to analyse if expected effects will realise and how these initiatives can be improved and aligned on each other.

2.84 Denmark scores relatively well on other so-called entrepreneurial determinants but relative to the top-performing countries in entrepreneurship, there is still room for (punctual) improvement for entrepreneurship policies in Denmark (*e.g.* venture capital, administrative formalities, etc.). Other countries also aim to improve their business environment for entrepreneurship; in addition globalisation and technological progress rapidly change the world economy, hence the continuing need for monitoring the overall entrepreneurship performance of Denmark in an international perspective.

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## CHAPTER 3 : ENTREPRENEURSHIP POLICIES IN DENMARK

This chapter describes the policies and programmes supporting firm creation and expansion in Denmark. The chapter starts with a more detailed presentation of the globalisation strategy and sets out the government's goals for entrepreneurship. It presents the main actors involved in entrepreneurship policies at national, regional and local levels. Finally, the most important instruments to remove obstacles to firm creation and expansion are presented in the areas of finance, human capital, access to advice and technology transfer.

### 1. The Danish Globalisation Strategy

3.1 Entrepreneurship policy is not new on the Danish policy agenda, as several strategies and plans have had a focus on entrepreneurship in the past: *A coherent Educational Strategy on Entrepreneurship* (1995), *The Competitive Power Package* (January 2002), *Action Plan for Entrepreneurs* (January 2003), *A Society with Room for the Free Initiative* (October 2003) and *Action Plan on Venture Capital* (January 2005). Most of the latest entrepreneurship policy initiatives are however taking place in the context of the 2006 Globalisation strategy. To meet the ambitious policy targets for entrepreneurship set by the Globalisation strategy, especially the organisation of business support services has undergone significant changes in 2007.

3.2 In April 2005, the Government set up the Globalisation Council<sup>31</sup> comprising representatives of all sections of society with the task of advising the Government on a strategy for Denmark in the context of a globalising economy. The outcome of this process was the publication of the Globalisation strategy in April 2006. The strategy contains 350 specific initiatives, which introduce reforms in key areas such as education and training, research and entrepreneurship. The strategy also sets out substantial improvements in the framework conditions for growth and innovation.

3.3 As discussed earlier, the strategy has designed two key policy objectives in the area of entrepreneurship:

- Denmark should continue to be among the European countries with the highest number of business start-ups per year
- Denmark should be among the countries with the largest share of high-growth start-ups.

3.4 Since the Danish government considers start-up rates to be at an appropriate level, most of the policy measures focus on high-growth start-ups. As a consequence most current programmes focus on stimulating high-growth start-ups or growth in established businesses.

<sup>31</sup> The Council was comprised of high level representatives of trade unions, industrial organisations, companies, the education and research community, and the Danish Government. The Government representatives included the Prime Minister, the Minister for Economic and Business Affairs, the Minister of Finance, the Minister for Education, and the Minister for Science, Technology and Innovation. The Council had a total of 26 members.

3.5 Following the work of the Globalisation Council a political agreement on the Implementation of the Globalisation Strategy was passed in the Folketing (parliament). The funding allocated to strengthening innovation and entrepreneurship in Denmark is presented in Table 7; a major part of the funds is directed to strengthen the quality of the counselling provided by the regional Centres of Growth (Vaeksthuse) (Table 8).

**Table 7.** Share of funds allocated to new and small enterprises in the context of the globalisation strategy

(In million DKK)

	2007	2008	2009	2010*	2011*	2012*
<b>Improved conditions for growth in new and small enterprises</b>	107	150	150	120	120	120
<b>Programme for user-driven innovation</b>	100	100	100	100	100	100
<b>Global Branding of Denmark</b>	110	108	109	110	110	110
<b>Other initiatives</b>	33	42	41	40	40	40
<b>Reserve</b>				130	130	130
<b>Total spending</b>	350	400	400	500	500	500

Note: The funding for 2010-2012 is to be negotiated by the government and the parties involved in the agreement on the implementation of the globalisation strategy.

**Table 8.** Distribution of funding for improved conditions for growth in new and small enterprises

(In million DKK)

	2007	2008	2009	2010*	2011*	2012*
<b>Strengthening of the quality of the counselling and the competences of the counsellors in the regional Centres of growth</b>	42	60	60	60	60	60
<b>Proof-of-Business</b>	40	40	40	40	40	40
<b>New venture fund in West Denmark</b>	15	30	30			
<b>Increased tax reductions when saving up in order to start an enterprise</b>	10	20	20	20	20	20
<b>Total spending</b>	107	150	150	120	120	120

Note: The funding for 2010-2012 is to be negotiated by the government and the parties involved in the agreement on the implementation of the globalisation strategy.

3.6 In addition to the funding for entrepreneurship and innovation, the agreement on the Implementation of the Globalisation Strategy has allocated funding to areas affecting entrepreneurship: for research and development (DKK 1 billion in 2007, rising to 5.2 billion in 2012) and for strengthening education at different levels (DKK 549 million in 2007, rising to 4.3 billion in 2012).

3.7 The Government monitors the implementation of the Globalisation Strategy on a regular basis. Every year a report is published (konkurrenceevneredegørelsen), providing a picture of developments and assessing whether objectives in the areas of education and training, research, entrepreneurship and innovation are met.

## 2. Governance in the area of entrepreneurship: the national and sub-national levels

### 2.1. The national level

3.8 The responsibility for entrepreneurship policies is mainly divided between The Ministry of Economic and Business Affairs and The Ministry of Science, Technology and Innovation at national level (Table 9). The former has the responsibility for general entrepreneurship policies, while the latter focuses on commercialisation of knowledge and support to science-based entrepreneurs. In addition, the Ministry of Education and the Ministry of Foreign Affairs have responsibility for minor parts of entrepreneurship policies related respectively to the introduction of entrepreneurship in the primary and secondary school curricula and to support the internationalisation of new and small enterprises, including support for innovation through international collaboration

#### *The Ministry of Economic and Business Affairs*

3.9 The Ministry of Economic and Business Affairs is responsible for a number of policy areas related to the general business environment (this includes business regulation, intellectual property rights, competition policy, the financial sector, the construction and shipping sectors). One of the Ministries' agencies, the Danish Enterprise and Construction Authority (DECA) is responsible for entrepreneurship policies in the area of business services, policies to promote an entrepreneurial culture and parts of the policies promoting entrepreneurship in the education system. The Vaekstfond, a state-backed venture fund, is also part of the resort of the ministry.

#### *The Ministry of Science, Technology and Innovation*

3.10 The Ministry of Science, Technology and Innovation is responsible for research, information technology (IT), innovation, telecommunications and tertiary education. One of the Ministries' agencies, the Danish Agency for Science, Technology and Innovation (DASTI) is responsible for a number of programmes related to entrepreneurship: public research funding, researcher mobility, commercialisation of research, interaction between knowledge institutions and the business sector and innovation policies. Its main task in relation to the entrepreneurship policies involves stimulating innovation and entrepreneurial thinking in higher education and research institutions and to support knowledge-based start-ups.

**Table 9.** Main actors involved in entrepreneurship related policies and programmes

	Ministry of Economic and Business Affairs	Ministry of Science, Innovation and Technology	Ministry of Education	Ministry of Foreign Affairs	Regions	Municipalities
<b>Basic advice to entrepreneurs</b>	Official responsibility and web-pages: <a href="http://virk.dk">virk.dk</a> and <a href="http://startvoerkst.dk">startvoerkst.dk</a>					Local business services
<b>Advice to growth entrepreneurs</b>	Regional centres of Growth					Regional Centres of Growth
<b>Capital</b>	Vækstforum	Innovation Incubators				
<b>Education to entrepreneurship</b>	Danish Entrepreneurship Academy Student Growth Houses The Foundation for Entrepreneurship activities and culture	IDEA	Education of teachers and curriculum for primary and lower secondary education			
<b>Internationalization</b>		International Innovation Centres		Danish Trade Council and International Innovation Centres		
<b>Financing of projects to promote high growth entrepreneurship</b>					Regional Growth Fosts	
<b>Technology transfer</b>		Proof of concept Science Parks				

### *The Ministry of Foreign Affairs*

3.11 The Ministry of Foreign Affairs of Denmark has diverse responsibilities related to the support of the internationalisation of Danish businesses. As an integrated part of the Ministry of Foreign Affairs, the Trade Council has the most important role as regards entrepreneurship: it supports Danish companies in their internationalisation efforts. Furthermore, the Trade Council aims to support the growth conditions for innovation among Danish businesses by facilitating access to foreign networks, knowledge, technology, capital and markets.

### *The Ministry of Education*

3.12 As the Ministry of Education has the responsibility for primary and secondary education in Denmark, it is responsible for the integration of entrepreneurship in the curricula. This includes description of subjects and objects clause for the different education levels.

3.13 In order to ensure coherence and coordination between the ministries a number of inter-ministerial working groups on among other things entrepreneurship education, a business-oriented innovation strategy and the counselling system for new and small enterprises has been set down in 2008.

## **2.2. The regional and local level**

3.14 Denmark has traditionally a decentralised public sector where municipalities have an active role with the right to collect taxes. The current division of labour as regards entrepreneurship is the result of the

2007 local government reform which has aimed at giving municipalities more responsibilities in relation to business services (Figure 41).

### *The local government reform*

3.15 A major reform of the regional and local government system was undertaken in January 2007<sup>32</sup>. The new framework structured the public sector with the state setting the overall framework and the municipalities acting as the main access point to the public sector for both citizens and enterprises. The regions are less directly involved with the entrepreneurs; however their regional development and planning tasks include making regions more attractive to entrepreneurial activity and they allocate funding to projects for entrepreneurs through the regional growth fora.

3.16 The reform also restructured the responsibilities for the provision of public business services. Before the local government reform 15 business centres<sup>33</sup> and local business service units in some municipalities were in charge of business advice. While the reform left the municipalities in charge of local business advice, it introduced 5 regional centres of growth to replace the 15 business centres.

3.17 This reflects a change in target groups: while the 15 business centres supported all types of start-ups and firms, the regional centres of growth focus specifically on advising new and small enterprises with a growth potential. The rationale behind establishing both regional centres of growth and local business services was to introduce a distinction in public advice between basic business advice - provided at municipality level - and more specialised advice provided by the regional centres of growth.

3.18 In addition, the reform gave the municipalities the main responsibility for the provision of (all) business services from January 1<sup>st</sup> 2007 through the *Law on promotion of Trade*<sup>34</sup> (*Lov om Erhvervsfremme*). This implies that municipalities have the responsibility not only of local business services, but also of the regional centres of growth. A transition agreement between the municipalities and the government stipulates that the state will fund the centres until 2011 (the total funding for the regional centres of growth amounts to 85 million DKK per year).

<sup>32</sup> The reform reduced the number of municipalities from 271 to 98 and abolished the 14 counties, to replace them by five regions. An average municipality has more than 30 000 inhabitants following to the reform, compared to less than 20 000 beforehand, while the new regions have between 0.6 and 1.6 million inhabitants.

<sup>33</sup> The Business centres were financed with 50% from the state and 50% from the counties and municipalities.

<sup>34</sup> The law also establishes a framework for the state's and regions' involvement in business promotion and regional development, and set up the Danish Growth Council.



**Figure 40.** Organisation of business support services following to the 2007 reform

### *The Regional level*

3.19 As regards regional development tasks, the regions' most important task is the preparation of regional development plans and the establishment of regional growth fora<sup>35</sup>. The growth fora's task is to identify regional and local opportunities of growth and to recommend projects to be financed by regional development funds and EU funds (the regions have to allocate around 1 billion DKK per year, whereof around 0.5 billion is from the EU structural funds). Based on this, a regional business development strategy is developed, serving as a foundation for the regional council's development plan. The regions do not have any institutions implementing the policies; they therefore rely on other institutions for carrying out the projects.

3.20 To secure coherence with the national strategy, a partnership agreement is made every year between the government and the regions where both parties identify priority areas for policy intervention. Coordination has also been secured with the establishment of the Danish Growth Council (*Law on promotion of Trade*). The council is a consultative body that has the task of promoting coordination between the regional business development efforts, the EU initiatives, and the central government level in order to create good conditions for business in Denmark<sup>36</sup>. The council allocates DKK 50 million to projects through the regional growth fora every year.

### *The local level (municipalities)*

3.21 As result of the local government reform, the municipalities have the responsibility for providing business advice at local level, but according to the *Law on promotion of Trade*, it is not obligatory. Although there is a long tradition in Denmark for the municipalities to provide advice to business, some municipalities are more interested than others in the provision of these. Some municipalities, in the

<sup>35</sup> The regional council may appoint up to two regional growth fora. The growth fora consist of representatives from the business sector, educational institutions, the parties of the labour market and politicians from regions and municipalities.

<sup>36</sup> The Danish Growth Council develops new knowledge that is used both for the national and for the regional growth policy. The Council focuses on 1 to 3 themes a year. It also funds projects linked to areas identified as central to economic development in Denmark. In 2008, these included projects related to sustainable energy, attraction of qualified foreign labour and a better framework for the growth of clusters.

Copenhagen area for instance, seem to have lesser interest as they receive most of their tax revenue from commuters working in the central Copenhagen. Other municipalities on the other hand have been highly dependent on generating employment from new businesses.

3.22 The municipalities are also involved in the five regional Centres of Growth since they are the founders of these centres and also have the majority of the positions on the boards of directors. The state funds the centres in a transition period until 2011 while a final agreement for the funding after 2011 still is to be made.<sup>37</sup> Services provided by these regional Centres of Growth focus on helping new and small enterprises entering a growth trajectory on more specialised matters such as internationalisation and IPR for example.

### 3. Policies and programmes in support of entrepreneurship

3.23 The Danish Government has sought to improve the framework conditions presented in Chapter 2 in a number of areas, introducing initiatives and programmes making it easier to start and grow a business. These programmes are mainly centred on improving access to capital, access to advice, entrepreneurship education and culture and technology transfer.

#### 3.1. Facilitating access to finance

3.24 Two major government initiatives have been implemented to ease high-growth-companies' access to risk capital: the Innovation incubators (Ministry of Science Technology and Innovation) and *Vækstfonden* (Ministry of Economic and Business Affairs). In addition, two state backed loan guarantee schemes are administrated by *Vækstfonden*.

##### a) Innovation incubators

3.25 The innovation incubators were created in 1998 as private limited companies - usually located together with science parks - that participate in the creation of new businesses, notably based on R&D originating from technology transfer units at the universities in the region. Since 1998, 4 tenders have been organised for the administration of public funds. In 2007, the seven Innovation incubators were funded with a total of DKK 141 million. The majority of the funds are used for investments.

3.26 Innovation incubators can support new enterprises at an early stage through:

- Identifying and screening promising ideas from knowledge based entrepreneurs
- Investing primary risk capital on behalf of the Ministry of Science, Technology and Innovation of up to EUR 200 000 in a combination of loans and capital (at least 18 per cent of the primary capital must come from private investors);
- Setting milestones together with the entrepreneur, monitor the progress and offer coaching and sparring to the entrepreneurs that the incubators have invested in

<sup>37</sup>

Regarding the funding of the business services, the state made an agreement with Local Government Denmark (an organisation with all the Danish municipalities as members) regarding the transition period. The agreement stipulates that five regional Centres of Growth should be established, and that these centres should be financed on basis of the funding formerly provided to the 15 business centres.

- Follow-up secondary risk capital investments in the companies on behalf of the Ministry of Science, Technology and Innovation of up to EUR 330 000 (at least 60 per cent of the secondary capital must come from private investors);
- Facilitating access to private funding through co-operation with business angels, *Vækstfonden* and venture capitalists.

b) *The Vækstfonden*

3.27 *Vækstfonden* is a government-sponsored investment fund established in 1992, with a capital base of DKK 2 billion (approx. EUR 300 million). The *Vækstfonden*'s current aim is to create a well functioning private market for venture capital. It invests strictly on market conditions, preferably together with private investors, and has the objective to support the growth of visionary companies in need of capital.

3.28 Its current strategic objectives are:

- acting as a catalyst by investing, together with private investors, directly in companies or through fund-of-funds in order to boost the Danish venture capital market;
- demonstrating that venture capital investments can be an attractive opportunity for investors in order to attract the investment from structural investors such as pension funds;
- collecting and disseminating knowledge on challenges and opportunities in the Danish risk capital market to generate a qualified basis for investment for *Vækstfonden* itself, as well as for other investors. This would also allow strengthening the advisory capacities for early stage investments.

3.29 Originally, *Vækstfonden* was established to provide high-risk loans to high-tech projects in start-ups and established firms. The initial capital base was invested in bonds, and the return was used for project funding. In 2001, *Vækstfonden* underwent a drastic change: the investment strategy moved away from soft loans to the provision of equity based investment on commercial terms.

3.30 *Vækstfonden* has an independent Board of Directors, which consists of leading Danish business people and entrepreneurs. In addition, observers from the Ministry of Economic and Business Affairs and the Ministry of Science, Technology and Innovation are also members of the board. Members of the Board are appointed by the Minister for Economic and Business Affairs. The *Vækstfonden* is regulated by *Law on Vækstfonden*, which gives the fund a rather broad mandate to invest and promote innovation in Danish businesses.

3.31 The *Vækstfonden* is engaged in a wide range of risk-capital activities, as reflected in Figure 41.

**Figure 41.** Vaekstfonden's risk-capital activities

### Funding for Global companies

3.32 Between DKK half a billion to DKK 1 billion are needed to bring global companies completely onto the market. Vaekstfond therefore invests in such companies in co-operation with other parties through fund of funds activities and through its engagement in Sunstone Capital (Box 4). By mid 2008 Vaekstfonden had invested in 19 funds having more than DKK 9 billion to invest. These funds were financing more than 150 companies.

#### Box 4. Sunstone Capital

In 2007, Vaekstfonden merged and privatised two direct investment activities into a new fund called Sunstone Capital. The fund manages more than 3 billion DKK and was created together with 6 private sector investors, including investment and pension funds. Originally, Sunstone Capital was part of the direct investment activities within Vaekstfonden. Vaekstfonden started with direct investment activities investing in Life Sciences and Technology sectors. However, it turned out that the investments needed in these sectors were very high because it were mostly globally-orientated companies. The direct investment activities faced problems with raising enough capital for this type of activities, despite of co-investments with the private sector. Based on this experience, a new public-private fund has been created. Today the fund invests totally on market conditions.

### International companies

3.33 "Growth Capital" is the Vaekstfond's direct investment activity, which is used for companies with a more limited investment need than the global companies. "Growth Capital" provides equity financing and loans or a combination of both. The investments range between DKK 5 and 25 million. Investments are often made in collaboration with other investors, such as Business angels, private funds or Innovation Incubators. Investments are made in companies with the perspective of an exit in 5-7 years. Mid 2008 the Vaekstfond had growth capital investments in about 30 companies.

### Regional companies

3.34 The Vaekstfond's investments in companies with a regional growth potential is done through engagements in regional venture funds and by co-investment with business angels. Vaekstfond's "Partner Capital", launched in 2007, targets regional growth companies with a capital need of between DKK 6 and

20 million (up to EUR 2.6 million). Partner Capital provides around 50% of the capital needed, the other 50% being provided by business angels. Partner Capital screens and selects companies based on recommendations from the business angels and both parties invest. Beginning of 2008, Partner Capital had invested in four companies.

3.35 Through its "Start-capital" investment programme, launched in 2007, the Vaekstfond also invests in teams of entrepreneurs working on customer needs that are not already met by products or services. The initial investments are range between DKK 4 and 10 million and there is a possibility for follow-up investments of up to DKK 30 million.

#### Loan Guarantee schemes

3.36 In addition to venture capital the Vaekstfond administers two loan guarantee schemes on behalf of the state.

- The "Get-started-loans" initiative started in 2005 and is a combined loan guarantee and advice arrangement for start-ups and enterprises being less than 12 months. The loan scheme offers certified banks a guarantee ratio of 75% on loans provided to young entrepreneurial firms. In addition, the entrepreneur is offered business consultancy through the loan, coordinated by the banks. Until 2007 these loans could reach up to EUR 70 000 and had a maturity of up to 10 years. The annual premium is 1.25% with a one-off handling fee of 2%. In 2008, the maximum limit of the loans was doubled to reach approximately EUR 140 000. The total amount of funds allocated to this scheme is DKK 35 million with a yearly budget of DKK 8 million. End of 2007, *Vækstfonden* was guarantying loans amounting to DKK 135 million benefitting 405 start-ups.
- The "Growth" Loan Guarantee scheme is provided to certified banks extending credits to firms within a range of EUR 10 000 to EUR 700 000. The guarantee ratio is 75%. The maturity of the loans is three to ten years, with an average maturity of around eight years. There is an annual premium of 1.25% and a one-off handling fee of 2%. The main objective of the Growth loan guarantee scheme is to augment bank lending to SMEs and to encourage innovation and development activities in SMEs. The scheme is open to SME's within all business areas, except shipbuilding, transportation, agriculture and fisheries.

3.37 The Loan Guarantee schemes are funded by the Danish Ministry of Economic and Business Affairs - in 2007 the budget was DKK 25 million - and benefit from a counter guarantee issued by the European Investment Fund under the European Community's Multiannual Programmes for SMEs. The current guarantee portfolio consists of around 730 active guarantees for bank loans of approximately DKK 1 billion. Between the initiation of the scheme in 2000 and 2007, the scheme has given guarantees to more than 1450 enterprises, amounting to DKK 2.2 billion in total.

Inter-ministerial committee on better access to capital for growth oriented entrepreneurs

3.38 A temporary working group consisting of among others representatives from the Ministry for Economic and Business Affairs and the Ministry for Science, Technology and Innovation is currently working on suggestions to improve the effects of public funds on the development of the Danish risk-capital market.

### 3.2. Improving entrepreneurial education and culture

3.39 The Danish government has initiated numerous small initiatives in order to promote entrepreneurship in the educational system and among the broader public. This has notably included

sponsoring TV-shows and entrepreneurship campaigns. The major Danish institutional initiatives in the field of entrepreneurship education are IDEA, the Øresund entrepreneurship academy and the Foundation for Entrepreneurship Activities and Culture.

#### *a) Higher Education*

##### **International Danish Entrepreneurship Academy (IDEA)**

3.40 The International Danish Entrepreneurship Academy (IDEA) was established by the Danish Government in 2005 to help create a stronger entrepreneurial and innovation culture in higher education. IDEA is a network organisation currently consisting of 88 institutions, organisations and companies. Its objectives are developed by the Council and the Board of Directors, which mainly consists of representatives from the private sector and the universities.

3.41 IDEA works at increasing the quality and amount of teaching in entrepreneurship and innovation at higher education institutions in Denmark, and to strengthen the collaboration and bridge building among higher education, established companies, authorities and other actors. This is done through the financial support of projects, development activities, research and by developing courses, educations and networks.

3.42 IDEA also supports students and graduates who are starting their own business. This is primarily done through the 12 IDEA houses that are located on educational institutions all over Denmark. These offer students among other, access to networks, practical training and mentors.

3.43 IDEA is funded with DKK 40 million supplied by the Ministry of Science, Technology and Innovation for a four year period ending in 2008. It has also benefited from donations from private companies, municipalities and regions/counties. The funding after 2008 is unclear and linked to the development of a new strategy for entrepreneurship education.

##### **Øresund Entrepreneurship Academy**

3.44 The Øresund Entrepreneurship Academy was established in September 2006 as a Danish-Swedish department of the Øresund University. The Øresund University is a co-operation between higher education institutions in the southern part of Sweden and in the eastern part of Denmark. It includes 12 higher education institutions, of which 8 are Danish. The 12 institutions have a total of 150 000 students.

3.45 The academy promotes courses and events on entrepreneurship in the 12 universities and coordinates, evaluates and upgrades courses. It also offers financial support to events and courses. The projects supported by the academy have to include collaboration with, for instance, small and large businesses, innovation incubators and research parks.

3.46 The academy is funded by a DKK 7.5 million grant from the Danish Ministry of Economic and Business Affairs and the Swedish Ministry of Enterprise, Energy and Communications for the period 2006-2008. The academy also receives funding from regional authorities in Sweden and Denmark. The funding after 2008 is unclear and linked to the development of a new strategy for entrepreneurship education.

##### **Student growth houses**

3.47 Seven student growth houses have been created in higher education institutions and give students attending higher education the opportunity to test and develop good ideas. The Ministry of Economic and Business Affairs offered to fund 50% of the houses during their first two years of existence. The houses offer different kinds of courses, sparring and counselling. This effort is coordinated with the 12 IDEA-houses and the initiatives were recently evaluated together.

### *b) Primary and secondary education*

#### The Foundation for Entrepreneurship Activities and Culture

3.48 The Danish Foundation for Entrepreneurship Activities and Culture is a public-private foundation, established in co-operation with Young Enterprise in 2004. The foundation aims to support and promote an independent and entrepreneurial culture in Denmark. Via Young Enterprise, the foundation serves as a nation-wide service organisation for educational institutions and regional organisations.

3.49 The foundation works on promoting young people's competences in the area of innovation and entrepreneurship at all levels in the education system. It participates in and carries out campaigns, competitions, awards and gives financial support to, for instance, television shows and the development of teaching material. Over the past year Young Enterprise has organised entrepreneurial activities including "Gazelle Games" and "Company Programme" for more than 15 000 students across Denmark (see also Box 5).

3.50 The foundation has also established a corps of "ambassadors for entrepreneurship" composed of entrepreneurs raising attention on the opportunities and challenges linked to being self-employed. The ambassadors promote entrepreneurship in events at schools or at other relevant occasions.

3.51 The foundation was granted DKK 30 million from the Ministry of Economic and Business Affairs for the period 2004 – 2006. Between 2007 and 2009, it will receive an annual grant of DKK 10 million. The foundation has committed DKK 20 million to co-finance approximately 60 projects involving the development of new material and education programs. The projects have a total budget of more than DKK 45 million. The funding after 2009 is unclear and linked to the development of a new strategy for entrepreneurship education.

3.52 In the educational year 2006-2007, 15 669 pupils and 260 teachers has been involved in an entrepreneurship course sponsored by the Foundation. Young Enterprise had 178 schools as members in the same year.

#### **Box 5. Business contests**

##### *Venture cup*

The Venture-Cup is a cross-disciplinary business plan competition run by seven Danish universities. The aim is to turn ideas and research into viable businesses, as well as to inspire and support students in becoming entrepreneurs. The participating entrepreneurs come from higher education institutions and compete for a grant and the possibility to realise their project. The initiative is co-financed by the Ministry of Economic and Business Affairs, the Danish Agency for Science, Technology and Innovation, The Danish Foundation for Entrepreneurship Activities and Culture, IDEA and representatives from the private sector. Venture-Cup works as an additional source of funding and attention for innovative businesses, but it also helps creating awareness on the role of the business sector in the universities.

##### *European Business Game*

In the European Business Game high school students compete to create the best fictive company and develop it. The participating teams are assisted by business managers working as consultants and providing inspiration for the individual project groups. The aim is that the students gain experience and knowledge of the possibility of being an entrepreneur. The winners of the national game go on to compete against the winners from other European countries. The initiative is funded by the Ministry of Education and a range of private organisations and companies.

*c) Teacher training*

The Entrepreneurship Education Portal

3.53 The portal [www.emu.dk](http://www.emu.dk) is the official website for the educational sector in Denmark. It provides teacher and pupils/students an access to teaching material, background information etc. Since 2005 the EMU has developed a whole section on entrepreneurship and innovation, this section is developed by UNI-C, a department of the Ministry of Education, and supported by the DECA.

The "Entrepreneurship-pillar"

3.54 The Entrepreneurship pillar is a project aiming at creating a coherent approach to teaching entrepreneurship in the Danish school system. Building on an analysis of the state of the art in entrepreneurship education, teaching material has been produced and integrated on the Entrepreneurship Education Portal. The Project is co-financed by the Foundation for Entrepreneurship Activities and Culture, the European Social Fund, the Ministry of Education and a number of public and private companies.

The Pioneer Campaign

3.55 The Pioneer Campaign, launched in 2007, is an initiative and targeted towards the teachers of entrepreneurship at secondary level and funded by the Ministry of Education. The Campaign has three main components:

- the Pioneer Award for teachers of entrepreneurship,
- the Pioneer Camp, a further education offer for teachers of entrepreneurship, and
- the Pioneer Forum, a conference on management of innovation and entrepreneurship for the strategic and management levels.

*d) A coming strategy for entrepreneurship education*

3.56 In the 2007 Government Platform *A Society of Opportunities* it is stated that: "all students in tertiary education should, as is the case in vocational training, be offered the opportunity to take entrepreneurship courses". An inter-ministerial working group has been established as a consequence with the task of developing a coherent strategy for entrepreneurship education in autumn 2008. The future funding in the area of entrepreneurship education depends on the recommendations of this group.

**3.3. Business services facilitating firm creation, growth and internationalisation**

*a) The local level*

Local business services

3.57 The development of local business service varies across the municipalities. However, most municipalities offer some sort of service to start-up companies, either alone or in co-operation. These services can for example include support to obtain permissions, or to explain regulation. It can also include initial counselling in relation to the business plan or the proposal of courses for start-up companies where the entrepreneurs receive training, for instance, in accounting, business plans or information about the tax system.



### *b The regional level*

#### Regional Centres of Growth (Væksthuse)

3.58 The Regional Centres of Growth are the result of the 2007 local government reform and are a key piece in the new framework of business services. Their role is mainly articulated around supporting the creation and expansion of high-growth start-ups.

3.59 The centres' main tasks consist in:

- providing free and impartial assistance;
- referring enterprises to private advisors;
- referring enterprises to relevant government agencies and organisations.

3.60 The centres have not been created with the objective of developing specialist competencies needed by enterprises to expand. Instead, the public counsellors of the centres aim to help entrepreneurs determine the advice needed and to redirect them to competent private advisors (Box 6). This set-up also meets the government's intention to strengthen the private market for business advice.

3.61 The generalist profile of the centres also involves close co-operation with specialised government agencies and other organisation. The centres co-operate with the Trade Council in order to promote internationalisation and with the Patent and Trademark Office in order to help companies regarding IPR related issues. The cooperation is regulated by written agreements, which differs from organisation to organisation. It can involve having staff physically placed in the Centres of Growth – this is for example the case of the Trade Council, which has an employee in the Centre of Growth in the Central Denmark region.

#### **Box 6. Objectives of the regional Centres of Growth**

During the transition period until 2011, the regional centers are financed by the Ministry of Economy and Business Affairs (DECA) based on yearly contracts. These contracts with the centers are identical besides the number of firms that have to be counseled, as this is dependent on the size of the region. The 2008 contracts set out 11 targets that the centres have to fulfill during the year; the contracts clearly restate that the target group of the centres are enterprises with a potential for growth:

- The centers have to provide a certain number of counseling courses – 2000 in total for the five centers
- 75% of the persons or enterprises counseled are referred either to private counselors or public schemes
- 80% satisfaction from the enterprises participating in the user evaluation
- The growth in the number of employees is at least 10% higher in the counseled enterprises than in the non-counseled enterprises in the region
- The growth in turn-over is at least 20% higher in the counseled enterprises than the non-counseled enterprises in the region
- The growth in export is at least 20% higher in the counseled enterprises than in the non-counseled enterprises in the region
- The number of high-growth start-ups in the region has grown by at least 2% compared to the previous year

In order to measure these objectives the enterprises registered in the CRM system are followed, their data is transferred to Statistics Denmark and their growth measured. The Centers are awarded a bonus if they fulfill the 11 targets in the contract. The maximum bonus ranges from DDK 1.2 million to DDK 2.4 million depending on the size of the region.

3.62 In order to create a national coherence and synergies between the centres, a common webpage, telephone number, user evaluation system, intranet, competencies development program, and customer relationship management (CRM) system have been established for all the five centres. In addition, a mechanism has been set up whereby the directors of the centres meet with the Ministry of Economic and Business Affairs (DECA) approximately once a month to discuss for instance the development of new products or campaigns.

3.63 The division of labour between municipal business services and the services provided by the centres is regulated by written agreements between the local business services. In addition, some centres pays the local units for referring customers to them in order to create an incentive for local business services to refer growth entrepreneurs to the centres. To distinguish firms with a potential and ambition for export or substantial growth, the consultants of the centres operate a screening process<sup>38</sup>.

3.64 The basic funding for the regional Centres of Growth amounts to DKK 89 million a year (including administrative costs). In addition, the DKK 42 million in 2007 and DKK 60 million in 2008 and 2009 are allocated to the centres on the basis of the agreement on the implementation of the Globalisation Strategy. While the previous part of the funding allows funding existing products and services, the latter part of the funding is devoted to the development of new products and services. These can for example be used for the Centres to carry out business-related tasks on behalf of the state. This is for example the case with the Early Warning initiative (Box 7).

#### **Box 7. The Early Warning initiative**

As part of the Globalisation strategy, an Early Warning initiative - a support system for companies in financial distress - has been set up. The initiative consists in providing free, neutral and confidential support to profitable enterprises heading for bankruptcy due to temporary problems, or to help unprofitable companies close down in a way that minimise the losses for the owner and the creditors.

The regional Centres of Growth are in charge of the initiative, though with separate funding. The initiative relies on a network of volunteer mentors and consultants based at the Centres of Growth. The consultants will screen the profile of the company in distress. If the firm has a potential for survival, the consultant will match the enterprise with a mentors who will try to help the owner make the enterprise profitable.

If the enterprise looks unable to become profitable, the consultant will help the owner to find an easy way to close down the enterprise. The initiative has been funded with DKK 3.3 million in 2007 and will benefit from DKK 7.2 million a year from 2008-2010

*c) Other organisations providing business services (see also Box 8 and Figure 42)*

#### **Connect Denmark**

3.65 Connect Denmark is a non-profit organisation founded in 2000 which supports the development of high-growth enterprises. The organisation is modelled after a similar American organisation and offers high-growth start-ups counselling and access to a network of representatives from the private sector,

<sup>38</sup>

In order to support this screening process, the DECA in co-operation with the Centres of Growth, IDEA and a group of Canadian researchers has developed a screening tool, which can be used by consultants who need to decide whether the enterprise or start-up should be offered the services of the Centres of Growth. The tool is also to be used by the providers of business services at the local level.

universities and international organisations. Connect Denmark has its main office in Copenhagen and has regional representatives in all the five regional Centres of Growth.

3.66 The organisation's main activity consists in organising pre-springboards and springboards events where start-ups get an opportunity to present their business case to a panel of experienced business leaders, counsellors and investors. CONNECT Denmark arranges 120 sparring and counselling courses a year, the main activities in this are Springboards and search for mentors, advisory board and board member. A Springboard is a two hour counselling brainstorm with 6-10 members of the network.

- The pre-springboards are for entrepreneurs who are developing their business plan and need advice as regards the focus, market potential or strategy of the future venture.
- The springboards are for entrepreneurs who have a business plan and need capital.

3.67 With basis in the listed activities CONNECT Denmark won a tender from the Vækstfonden to provide proof of business support to new enterprises in search of venture capital (the initiative is part of the implementation of the of the globalisation strategy). 40 million is provided through Vækstfonden to invest in the enterprises and 4 million DDK are allocated to as CONNECT Denmark operations fee. The purpose of proof of business is to improve potential high-growth start-ups' investment readiness and to facilitate their access to risk capital. Over a three year period, Connect Denmark has as a target to carry out 300 sparring and counselling courses. These activities are implemented in close corporation with the regional Centres of Growth.

#### The Trade Council of Denmark

3.68 The Trade Council of Denmark, which is an integrated part of the Ministry of Foreign Affairs, helps Danish enterprises internationalise through export promotion and counselling. This also involves offering internationalisation programs to new and small enterprises, where these can benefit from counselling on internationalisation at reduced costs. The Trade Council has employees at Danish missions<sup>39</sup> abroad as well as in Denmark. It offers the following programmes to new and small enterprises:

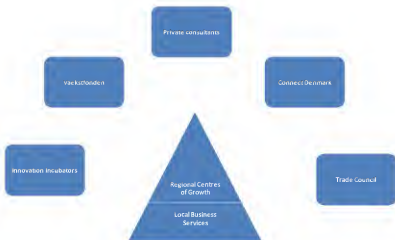
- The 'Export Preparation' program consists of 25 hours of free counselling for Small and Mediumsized Enterprises (SMEs) with less than 50 employees and less than DDK 50 million in turnover. The counselling is targeting enterprises in the early stages of the internationalisation process and leads to a plan for the enterprises' international activities.
- The 'Born Global' programme (targeted at enterprises in the ICT, life-sciences and medical sectors) and the 'Born Creative' programme (targeted at creative businesses in the cultural sector, e.g. entertainment and music) help enterprises realise their international potential. Similar to 'Export Preparation', entrepreneurs within these programmes are offered 25 hours of free counselling, which lead to an action plan for their international activities.
- The 'Export Start' program is targeting SMEs that are ready to enter foreign markets. The aim is to promote internationalisation of the SMEs. The programme offers the enterprises a discounted rate on the individual consultancy services provided by the Trade Council in the missions abroad. The services could be partner searches, markets opportunity surveys, sourcing and outsourcing etc.

<sup>39</sup> Some Danish missions also act as incubators, helping enterprises to access the local markets.

- The “innovation package” programme is targeted at innovative SMEs in the fields of ICT, life science, environment/energy and design. The SMEs can through the programme receive a 50% discount on the consultancy services provided by the innovation centres in Silicon Valley, Shanghai and Munich.

3.69 The five programmes benefit from public funding which amounts to DKK 16.3 million in 2008.

**Figure 42.** Main actors providing business services



#### Innovation centres in Silicon Valley, Munich and Shanghai

3.70 The Innovation centres in Silicon Valley, Munich and Shanghai have been established in co-operation between the Ministry of Foreign Affairs and the Ministry for Science, Technology and Innovation. Their main purpose is to ease access to knowledge and networks for Danish research institutions and businesses in these innovation hot-spots in order to stimulate innovation and international growth of Danish businesses and research institutions

3.71 The Innovation Centres offer the following services to businesses:

- market assessment
- business plan review
- entry planning
- incubator
- capital connections
- networking and match-making
- mapping of potential research and innovation partners

3.72 The centre in Silicon Valley was established in June 2006, the Shanghai centre in September 2007 and the Munich Centre in June 2008. The centres are funded with DKK 3 million (2007), DKK 6 million (2008) and DKK 4 million (2009). Estimated revenue from the three innovation centres is approx. DKK 2 million per year.

**Box 8. Information for enterprises online**

Virk.dk

In order to make it easy to set up an enterprise the portal has been set up by Ministry of Economic and Business Affairs (Danish Commerce and Company Agency). This site allows creating and closing down a company. During the process all new enterprises receive an electronic newsletter that contains information on the public business services.

Startvaekst.dk

The regional Centres of Growth have a national webpage containing tools and information on starting and developing businesses and presenting the services offered. The structure of the webpage is developed by the DECA. (The Ministry of Economic and Business Affairs) but most of the material on the webpage is produced by the regional Centres of Growth. Each of the Centres has its own sub-site on the page, where staff and special offers are presented (to be re-launched in August). Discussions are underway to extend the webpage to the local level to create one portal for advice.

In addition, the Danish Trade Council runs the webpage [www.eksportstart.dk](http://www.eksportstart.dk) where enterprises can get information on internationalisation and together with the other publicly funded internationalisation programmes the webpage [www.goglobal.dk](http://www.goglobal.dk) that gives an overview of all the public funded programmes.

### 3.4. Boosting business development

3.73 Accelerator programs operate over a longer period of time with the aim of leading enterprises to enter growth trajectories. Participating enterprises are challenged in a broad range of areas in order to make them capable of solving problems they will have to face in the future.

#### *a) Accelerator programmes financed by the state*

##### *Gazelle Growth*

3.74 This program targets potential or already fast-growing Danish firms aiming at expanding through internationalisation, notably through access the United States markets. Companies are expected to have at least 5 employees at the beginning of the programme. Successful applicants meet an established set of criteria and undergo a qualification process. The programme includes intensive training and helps Danish companies meet potential business partners and customers in the United States. Each company works intensively with a national coach in Denmark and with international coaches in Denmark and in the United States.

3.75 The Gazelle Growth programme is divided into two parts:

- The first part is an intensive period of 4 months focused on three dimensions: the product, the market and the customers. This period includes camps in the United States.
- After this intensive period, follows an execution support period of 10 months. This phase allows to pursue the selected strategy and to operate adjustments. During this period the Gazelle Growth programme provides support based on the company's individual needs.

3.76 The Gazelle Growth programme is implemented by a consortium of partners supporting all stages of the programme: inflow of gazelle candidates, general training, international counselling, market access, capital and network. The programme is financed by a tender from the Ministry of Science, Technology and Innovation, the consortium receiving DKK 32 million to finance the program from 2007 to 2009. It is expected that between 40 and 50 enterprises will benefit from the program during this period.

#### AcceleRace

3.77 AcceleRace is another accelerator program (currently under implementation) aiming to help firms to faster/better commercialise their products and services. The program targets potential high-growth entrepreneurs and start-ups in Denmark and provides them with insight into customers, market and competitors, helping them develop a concrete and realistic go-to-market strategy. As such, the target group is broader than is the case of the Gazelle Growth programme.

3.78 The tender on the development and testing of the program was won by a consortium consisting of Symbion, Scion DTU, Connect Denmark and TechTransfer Office in 2007. The program will be tested in 2008 and in 2009, at least 20 enterprises out to have experienced the program. If this pilot programme is successful, the program will be offered as a product in the regional Centres of Growth in 2009.

3.79 The program consists of five modules; a screening module, three business development modules and an execution module where the plans are to be realised. The screening and selection of participating enterprises is primarily done by the regional centres of growth.

3.80 The development and testing of the program was funded with DKK 4.2 million in 2007. The implementation of the program in the regional centres of growth is estimated to DKK 6 million in 2008 and to DKK 10 million in 2009. The costs per enterprise are estimated to be around DKK 100 000.

#### *b) Accelerator programmes financed by the regions*

3.81 Several regional growth fora are initiating accelerator programmes as part of their regional development plans.

#### Fashion Accelerator

3.82 The Fashion accelerator programme is targeted at SMEs in the fashion industry and aims to promote growth in 40 enterprises in the design and textile industries in the Capital and the Central Denmark regions. The participating enterprises will be assisted by mentors and receive counselling notably on internationalisation, branding, design and business development. The Centre of Growth of the Capital Region leads the project together with a range of other partners. The project has received DKK 11.9 million in funding from the regional growth fora.

#### GrowthBooster

3.83 GrowthBooster is an accelerator program under implementation offered by the regional Centre of Growth of the Southern Denmark region in co-operation with IDEA and Connect Denmark. The programme has 4 modules and a follow-up phase. The modules involve mentoring, strategy development and internationalisation. The programme also includes springboards provided by Connect Denmark. Enterprises have to provide DKK 38 200 from own funds to be able participate. The programme will commence in the fall 2008 with the 20 enterprises. The project has received DKK 1.8 million in funding from the regional growth fora.

#### Enterprise growth programs in Region Central Denmark and Northern Jutland

3.84 In the Central Denmark region and in the Northern Jutland region, the regional growth fora have allocated funds to the regional centres of growth to support the financing of private counsellors for enterprises with a growth potential. With this programme, enterprises that qualify for the programme through a screening process set up by the regional centre of growth, will see of 50% of their expenses for private business advisors funded. In addition, funding from the growth fora is to support mentoring and internationalisation.

### 3.5. Supporting technology transfer from the universities

3.85 Technology transfer is regulated by two laws: the *Act on inventions at public research institutions* and the *Act on Technology Transfer, etc. at Public Research Institutions*. These laws incite research institutions as well as researchers to develop inventions and to commercialise them. It gives the institutions the right to take over the intellectual property of their employees in return for an economic compensation and to negotiate IPR contracts with industry. If university entrepreneurs wish to establish a company of their own, they can retain the IP in return for a remuneration to the institution. In order to stimulate the creation of spin-out companies universities are entitled to accept equity in private enterprises as an alternative to cash payment for IPRs. At the same time these laws have also established technology transfer offices at the universities to assist in the protection and commercial exploitation of IP

3.86 A temporary working group is currently reflecting on improving IPR-agreements between research institutions and businesses (The Johan Schlüter Committee) to further increase the commercialisation of research knowledge. The working group will provide a model contract toolkit to facilitate the entering of IP agreements between academia and industry in joint research projects.

3.87 The Ministry for Innovation, Science and Technology has launched a number of programmes to stimulate the emergence of innovative projects from public research institutions.

#### a) Proof of concept

3.88 The proof of concept initiative has been set up to allow the maturing and documenting of inventions from public research to assess their commercial potential. The initiative aims to bring the invention to a level where it becomes attractive to private investors. As a consequence, research institutions can apply for funds for example to:

- Free personnel from other academic duties;
- Provide a salary to project assistance;
- Cover overhead costs;
- Operate feasibility studies;
- Fund patents.

3.89 As a part of the agreement on the implementation of the *globalisation* strategy, DKK 40 million have been allocated to financing of proof-of-concept programme between 2007 and 2009. Universities, research institutions and hospitals can apply for funds under the condition that they co-operate with actors from the business sector, including at least one of the innovation incubators.

#### b) The national network for technology transfer

3.90 The 'National Network for Technology Transfer' has as main task to strengthen the potential for technology transfer of Danish universities and research institutions. The network offers for examples

courses and education in the field of IPR and technology transfer. The network runs the webpage [www.techtrans.dk](http://www.techtrans.dk) where knowledge on technology transfer is distributed.

*c) Science parks*

3.91 Science parks provide facilities to new and innovative enterprises. They are often located in proximity to Higher education institutions and often co-operate with the science incubators. Most of the science parks operate as limited companies and in close relation to universities.

*d) Knowledge vouchers*

3.92 The purpose of the knowledge voucher is to enhance the innovation and development activities in SMEs and to strengthen their co-operation with public research institutions. The vouchers are delivered to SMEs and can be used to buy knowledge from research institutions and GTS institutes.

3.93 The vouchers have a value of between DKK 50 000 and DKK 100 000 and can finance up to 50% of the cost of the undertaking. The total funding by this programme is DKK 20 million per year in 2008 and in 2009.

*e) Public service for inventors*

3.94 In addition to the technology transfer from the university, the Ministry for Science, Technology and Innovation funds a program that supports inventors that not necessarily have a base in the research environments. Public service for inventors is a counselling service targeted broadly at people who has made an invention and wish to commercialise it. The counselling is mostly telephone and internet based, but face to face counselling does also take place. The counselling is carried out by Technological Institute, which is a non-profit organisation operating some public schemes, for instance, related to testing of technological standards.

#### **4. Concluding remarks**

3.95 Since early 2000, Denmark has adopted a wide range of programmes promoting entrepreneurship, easing access to finance, providing entrepreneurship education, improving access to counselling, technology transfer and internationalisation. The support to entrepreneurship has further increased with the 2006 Globalisation Strategy. In addition to already existing programmes, further funds have become available to develop new programmes, mainly aimed at supporting enterprises with high growth potential. Given the inter-ministerial working groups it seems as national coordination of initiatives and policies is on the political agenda.

3.96 The 2007 local government reform has allowed the Danish government to re-think the Danish business support infrastructure. The regional growth fora have become in charge of funding projects promoting enterprise growth. As regards the provision of business services, the reform has resulted in more differentiated advice, with basic business services being provided by municipalities, while the newly created regional Centres of Growth service growth-oriented businesses.

3.97 In this context, a number of co-ordination challenges have emerged, notably between regions and municipalities, as the former are responsible for the regional growth fora, while the latter are in charge of the regional Centres of Growth. Co-ordination is also needed between the municipalities delivering basic services to enterprises and the Centres of Growth to optimise task-sharing between these two levels of delivery.



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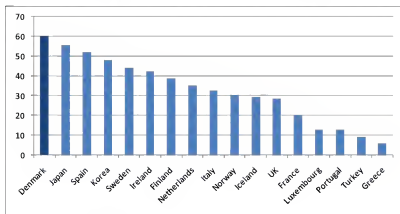
## CHAPTER 4: GOVERNANCE OF ENTREPRENEURSHIP ACROSS GOVERNMENT LEVELS

This chapter analyses on how entrepreneurship policies in Denmark are coordinated across government levels, given that entrepreneurship policies in Denmark have multi-level governance dimensions. A case study is made of the multi-level government coordination in metropolitan Copenhagen, in which the regional level (the Capital Region) and the municipal level (City of Copenhagen) play their respective roles. In addition, the case study of metropolitan Copenhagen is contrasted with practices in the region of Mid-Jutland.

### 1. Multi-level framework for effective governance of entrepreneurship

4.1 Denmark is a highly decentralised unitary state; there is no unitary state in the OECD in which sub-national governments take up such a large share of the total government budget (Figure 43). Its high degree of decentralisation is expressed in a variety of public tasks that are devolved to local governments and its large share of sub-national expenditure. At the same time, Denmark is a unitary state. This implies that the central government attempts to maintain policy coherence and consistency across its territory. A strong tradition of negotiation is underpinning this aim for policy coherence. As a consequence, local governments can be considered both autonomous bodies, dependent on the preferences of their local electorate, and agencies of the national government for several state functions.

Figure 43. Sub-national expenditures as share of total government expenditure in unitary OECD countries, 2006



Source: OECD National Account Statistics

4.2 Municipalities form the dominant sub-national government tier in Denmark. They have various functions, tax revenues, a budget almost twice the size of the central government budget and elected leaders. There are currently 98 municipalities in Denmark. The second sub-national government tier is

formed by the regions: they have more limited functions and no tax revenues. Their budget is half the total municipal budget and slightly lower than the national government budget. There are currently five regions in Denmark.

4.3 The current government framework is the result of a structural reform introduced in 2007. This reform aimed at improving the performance of sub-national governments by increasing the size of them. At the local government level this was done by means of a process in which municipalities were requested to cooperate with each other or to amalgamate in order to reach at least a size of 20,000 per local government unit. The resulting wave of municipal amalgamations reduced the number of municipalities from 271 to 98; at the regional level, the 14 existing counties were replaced by five regions. The rationale behind this was that the regional level should focus on the provision of public health services and that increased size of regional government units would be needed to increase effectiveness. In parallel with this, the regional government level lost its power to tax and some of its responsibilities. These recent changes complicate to some extent the assessment of governance frameworks in Denmark, as a new equilibrium between actors, in particular in relation to the regions, is currently being created.

4.4 Municipalities are the suppliers of nearly all welfare goods and services in the country. This has been the case since the 1970s. In addition to the tasks that are typically associated with local governments in all OECD countries, such as refuse collection and local roads, Danish municipalities are responsible for implementing national welfare policy, including deciding on who is eligible to benefits such as unemployment benefit, sickness benefits and various social benefits. The most important expenditure items on municipal budgets are education, social services, child care, active labour market policy, culture, local roads and utilities. Main responsibilities of regions are within the field of health and regional development. There are some shared responsibilities, such as in social services and certain health care services.

4.5 In order to realise the national targets on high growth entrepreneurship (see chapter 3), five so-called regional Regional Centres of Growth (Væksthuse) were set up in 2007. These are service organisations, located in the five regions in Denmark and financed by the central government. Each Regional Centre of Growth has a board governing the organisation, in which municipal representatives have the majority and in which state, business and the regional growth forum are also represented. The five Centres receive a yearly grant of around DKK 90 million and an additional DKK 162 million for the period 2007-2009 has been made available by the national government to develop the initiative. 90% of the services and competencies budget to regional growth houses is based on a basic amount and per capita allocation and the remaining 10% is based on their performance.

4.6 The Regional Centres of Growth are supervised by the central government (the Danish Enterprise and Construction Authority) on the basis of yearly contracts. In these contracts the targets are set out that the Centres will have to achieve; these targets are set by the Danish Enterprise and Construction Authority. The 2008 contracts included 11 of these targets: 60% of this performance-related funding is based on performance on indicators related to input and throughput; 40% on output indicators. The 4 output indicators (each having a weight of 10%) are the employment, turn over and export growth of the start-ups and the share of gazettes in the region. There is still a final agreement between the municipalities and the Ministry of Economic and Business Affairs on the funding of the centres after 2010 to be made.

4.7 Municipalities and regions also have responsibilities for business services (see chapter 3). Whereas the Regional Centres of Growth are responsible for growth entrepreneurs, municipalities have the responsibility to provide business services to the other entrepreneurs and businesses in general. This implies a split in service provision: municipalities would have to refer growth entrepreneurs to the Regional Centres of Growth and the centres would have to refer non-growth entrepreneurs to the local business services. The regional growth forums also have tasks related to business services. They formulate regional economic development strategies and have funds, such as EU funds, that they can use to foster

business development. In order to evaluate the multi-level governance framework of entrepreneurship policies, a case study on metropolitan Copenhagen will be provided below.

## 2. Regional and local governance of entrepreneurship: the case of metropolitan Copenhagen

### 2.1 Defining Copenhagen

4.8 Copenhagen is the largest city in Denmark, by any possible definition of a city. When the administrative boundaries are taken as a definition, the city of Copenhagen currently has around 510,000 inhabitants. With the municipality of Frederiksberg, which is located within the city of Copenhagen, this would add up to 594,000 inhabitants, roughly twice as much as in Aarhus, the second Danish city. This definition however understates the importance of Copenhagen, since the functional metropolitan area of Copenhagen is considerably larger.

4.9 The functional area is the area in which people live, work, shop and recreate, regardless of administrative (municipal) boundaries. The OECD methodology to define functional metropolitan regions takes into account population size, population density and commuting flows as an indicator of whether urban areas represent a contained labour market, that is: areas where commuting within the region is considerably higher than between it and the surrounding areas (OECD 2006). On the basis of this methodology, and taking into account available longitudinal data sets, the metropolitan area of Copenhagen has around 1.83 million inhabitants; this represents a third of the total Danish population. An alternative demarcation is given by the boundaries of the Capital Region in which 1.64 million people live; this area includes the city of Copenhagen and 28 neighbouring municipalities (Table 10).

**Table 10.** Definitions of the Copenhagen area

	<i>Population</i>	<i>Share of national population</i>
City of Copenhagen	510,000	9%
Copenhagen and Frederiksberg	593,000	11%
Capital Region	1,640,000	30%
Metropolitan Copenhagen	1,830,000	34%

4.10 Denmark is one of the finest examples in the OECD of a country with one evident hegemonic city. Not only is Copenhagen the largest city and the political capital, but it is also the main economic and cultural city in Denmark. In this, Denmark is different from many OECD countries, such as the United States, Italy and Germany, where these different functions are dispersed over several cities. The large population share of Copenhagen translates in an even higher share of the national economic production. The economy of metropolitan Copenhagen represents almost a half of the national economy. This makes Copenhagen the metropolitan area in the OECD of which the economy represents the largest share in its national economy.

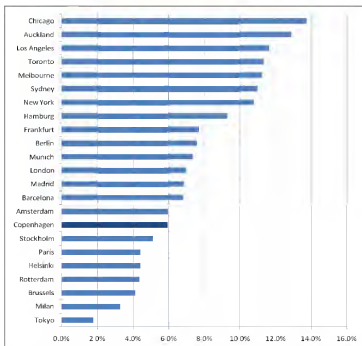
### 2.2 Entrepreneurship in Copenhagen

4.11 The entrepreneurship rate in Copenhagen is relatively low in comparison with other metropolitan areas in the OECD and compared with European metropolitan areas, the position of Copenhagen appears average (see figure 44). The Copenhagen area is however the most entrepreneurial in Denmark. The Capital Region has more entrepreneurs per inhabitants, higher start up rates, slightly higher growth entrepreneurship rates and considerably higher global orientation. The survival rate of start ups in the Capital Region is however lower: 78.8% whereas the national average is 80.6%. Start ups in the Capital Region also show lower growth in number of employees (Table 4).

4.12 Municipalities in Greater Copenhagen score well in national entrepreneurship benchmarks. All 98 municipalities have been benchmarked on different aspects of entrepreneurship. It turns out that municipalities in Greater Copenhagen are dominating the top ranks for entrepreneurship. Thirteen of the 20 best ranked municipalities come from Greater Copenhagen; the city of Copenhagen ranks second, Frederiksberg third. The municipality with the highest entrepreneurship ranking is Horsholm, a suburb to the North of Copenhagen. The indicators that form part of the benchmark are start-up rates, growth entrepreneurship rates and global orientation. The city of Copenhagen scores first when it comes to global orientation and second with respect to start-up rates; it scores slightly less well on the indicators for growth entrepreneurship: 7<sup>th</sup> regarding the share of enterprises with more than 60% turnover growth in three years; and 11<sup>th</sup> with regards to enterprises that grew to over 20 employees in three years (REGLAB 2007).

4.13 Self-employment is often used by immigrants as a means of escaping marginalisation on the labour market. The self-employment figures of immigrants are however comparatively low. Although there are no formal obstacles to self-employment in Denmark that are related with immigrant status, it might be more difficult for immigrants to get access to loans. This is probably related to the fact that most immigrant entrepreneurs start-up in sectors with low entry barriers and severe competition.

Figure 44. Entrepreneurship rate in selected OECD metropolitan areas



Note: these data are expressing early-stage entrepreneurial activity rates from metropolitan areas for which sufficient data were available. These areas include suburbs and reflect labour market areas. Early-stage entrepreneurial activity is defined as nascent entrepreneurship (those involved in setting up a business) and the rate of owner-managers of a new business (up to 3.5 years old).

Source: Bosma et al. 2008.

**Table 11.** Entrepreneurship in the Capital Region and Denmark, 2003

	Capital Region	Denmark
Entrepreneurship rate	5.3%	3.9%
Start up rate	10.2%	8.4%
Survival rate	78.8%	80.6%
Growth entrepreneurship rate	3.7%	3.6%
Global orientation	29.8%	25.7%
Growth of employees	9.7%	12.9%

Source: [www.regionalt.dk](http://www.regionalt.dk)

### 2.3 Responsibilities of main actors

4.14 The Regional Centre of Growth in the Capital Region or Business Link Greater Copenhagen Area is an important actor in business services, employing around 25 people and having a budget of DKK 20 million in 2007. The Centre in the Capital Region considers its main tasks to be providing information, advice and mediation. Information is provided via a website, a hotline and meetings organised by the centre. Advice is provided through guidance, mentoring, coaching and via networks. Mediation is done with private advisers, public organisations and banks. Important projects initiated by Business Link Greater Copenhagen Area are Copenhagen Innovation Centre and the Fashion Accelerator.

4.15 The Capital Region mainly provides visions and funding. Regional visions for the business area are formulated in the Regional Business Development Strategies drafted by the regional growth forums in which representatives of business, education and government are represented. In line with that vision, regions fund different business development projects. The Capital Region for example supports Copenhagen Innovation Centre and the Fashion Accelerator, which is a project of the Business Link Greater Copenhagen Area that is partly funded by the region and partly by EU structural funds. The Capital Region does not exclusively fund projects proposed by the Business Link Greater Copenhagen Area as it considers that general entrepreneurship projects should be carried out by the Centre, but that projects that are more sector-specific are generally carried out by other actors. Projects funded by the Capital Region without involvement of the Business Link Greater Copenhagen Area are (or are under discussion): science parks such as Symbion for ICT and the Copenhagen Biotech Science Park, that both supply specialist knowledge on domains such as patents.

4.16 The City of Copenhagen established a business centre in 2008. It replaced a business center co-founded with the municipality of Frederiksberg. The Copenhagen business centre offers advice to entrepreneurs on setting up businesses, taxes, planning and finance by offering all entrepreneurs free advice. The amount of advice is decided in the individual cases. A hotline and website have been in place since 2007; the business service also includes network arrangements and courses. The Copenhagen business centre currently has 7 advisers, which have helped 1,200 entrepreneurs in the first six months, and will have a budget of DKK 9 million a year in 2009. Special priorities for the business centre are creative and ethnic entrepreneurs. From 2009 the Copenhagen business centre will open a one-stop-shop for entrepreneurs and SMEs. The ambition is to have also national authorities seconded in the business centre, such as tax and police officers.

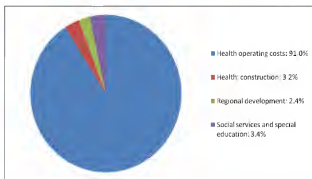
4.17 Not all municipalities in the Copenhagen area offer local business services as it is not mandatory: of the 29 municipalities in the Capital Region, 25 offer local business services in 2008; this was an increase from 2007 when 18 municipalities offered local business services (Vaeksthus Hovedstadsregionen 2008). These are mostly residential areas from where people commute to Copenhagen and other economic centres within the Capital Region. In metropolitan areas it is inevitable that some areas specialise in offering residential functions. These municipalities are to some extent free-riding on services provided in the other

municipalities, as local business services have indicated that they will not refuse to service entrepreneurs coming from these municipalities.

4.18 Entrepreneurship policies form a very small proportion of the budgets of Copenhagen City. More than half of the budget of the City of Copenhagen is spent on social services, such as employment benefits, elderly care and childcare. A further 30% is reserved for health care and education and expenditure for housing and transport take up a relatively small part of the budget of the City of Copenhagen. Entrepreneurship policies represent a marginal part of the City budget with DKK 9 million a year (being less than 0.1% of the city budget).

4.19 The dominant task for regions is healthcare and the composition of expenditure items shows the priority of this responsibility for the Capital Region. Around 93% of the budget of the Capital Region is spent on health items, overwhelmingly operating costs. A relative small part of the budget (2.4%) of the Capital Region is spent on regional development, half of which in public transport and the rest in business development, environment and culture (Figure 45). The regions also nominate project to receive the EU-funds that are available for Danish regions. The Capital Region is expected to receive DKK 70 million over the period 2007-2013 from the EU Structural Funds related to target 2 (Regional competitiveness and employment).

Figure 45. Main budget items of the Capital Region 2007



Source: Data from Capital Region

## 2.4 Visions and policies of main multi-level governance actors

4.20 The central government has in 2006 formulated its strategy for Denmark in a global economy. The key goals in this strategy were strong competitiveness and strong cohesion, to be achieved by world class education, research, entrepreneurship and innovation. Among the quantifiable targets were 50% higher education attainment, 3% of GDP on R&D expenditure and the largest number of business start-ups and high growth start ups in Europe. An action plan was made in which the initiatives were made more specific and became funded. The national government and the regional Growth Forum of the Capital Region made an agreement on partnership for growth for 2007-2009 to link the national *Globalisation Strategy* and regional growth initiatives.

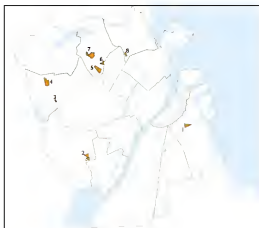
4.21 The priority on high growth entrepreneurs is reflected in regional strategic visions. The regional business development strategy, "Partnerships for knowledge, growth and welfare" mentions more

high-growth start ups as one of the important challenges, in particular knowledge-based high growth start ups considering the high density of knowledge institutes in the Capital Region. The Capital Region sets itself the target to be Northern Europe's most attractive metropolis in 2015, with regard to living, education work, doing business and visits. Priorities in this plan are infrastructure, education, recreation, environment and a good business environment. The capital region aims to be the greenest capital of Europe and envisages becoming a Northern European logistics and trade hub. Economic clusters that will be stimulated are IT, interactive entertainment, mobile and wireless communication, the bio-medical cluster, movie industry, fashion, environment and energy technology, and foods and nutrition.

4.22 The city of Copenhagen shares the ambition to create good conditions for start ups and has formulated the creative sector as a priority for business development. The City Development Strategy 2005-2009 stresses sustainability, affordability, accessibility to the water and economic dynamism. In addition to that, the city of Copenhagen has tried to relax regulation for businesses by having initiated the project "Gearing up Copenhagen" in 2007, which has the aim to secure deregulation and ease business creation by establishing a single entry point. It entailed a more permissive approach to events and concerts in the public spaces in the city, as well as flexible stalls and outdoor service from restaurants and cafés.

4.23 The City Development Plan also designated eight creative zones where affordable working space would be made available. These zones are part of the port area, adjacent to the new Opera House, and Vesterbro meat processing district identified as incubators for creative industries<sup>40</sup>. These areas are located at the border of the dense inner city and old industrial city fringe, with mixed-use buildings of varying size and in need of refurbishment and re-use (Figure 46). This zoning initiative, using lower plot ratios as a planning tool, has sought to provide flexible workspace opportunities for creative and other small businesses, whilst retaining the industrial heritage and light industrial space.

Figure 46. Creative zones in Copenhagen



Source: The City of Copenhagen.

<sup>40</sup> The eight creative Zones are - 1. Siljengade, 2. Carl Jacobsen Vej, 3. Kastanie Alle, 4. Skjulhoj Alle, 5. Ornevej, 6. Drejervej, 7. Tomsgardsvej, 8. Teglværksgade



## 2.5 Evaluation of sub-national policies

4.24 Although there are some collections with good practices in sub-national business policies in Denmark (Reglab 2007, Teknologisk Institut 2007), there are no systematic evaluations of local business development policies and instruments. This makes it difficult to judge what has been the value added of which local business services in the past and hinders the implementation of evidence-based policies. Data are currently collected both by the Business Link Greater Copenhagen Area in the Capital Region and the city of Copenhagen on use of their services and a large evaluation set-up is being constructed for the growth houses.

### *Creative entrepreneurship*

4.25 Preliminary evaluation of the creative zones in Copenhagen suggests that five out of the eight are experiencing growth in creative business activity, whilst the remaining three zones have not attracted or retained firms (City of Copenhagen 2007). Growth is taking place particularly in advertising, design and architecture but it is not clear how these creative zones relate to the wider city and capital region's creative production and cultural consumption clusters. Although the city is seen as "one cluster" (Creative Forum), creative quarters and clusters are likely to exist, whether formally or informally (*i.e.* networks), and this will be important in encouraging innovation, prioritising sectors over time and for policy interventions and targeted investment that creates knowledge spillovers.

4.26 A creative economy baseline mapping might help in highlighting where spatial clusters and production/supply chain links are strong and where barriers and gaps exist in growth opportunities and infrastructure. Similar detailed studies have underpinned creative industry strategies and support programmes in London, Toronto and Berlin, and helped make the case both politically and with industry, to counter suggestions that the combined creative sector is neither robust nor substantial enough to warrant economic development and prioritisation (Evans, Foord and Shaw 2005).

4.27 Although the focus on creative industries could work to foster entrepreneurship in Copenhagen, a more focused approach would be recommendable. There is a "lack of consistent, coordinated data and intelligence - making policy development difficult" (NICe, December 2007). This is echoed in the recent *Creative, Competence, Competitiveness in the Danish Experience Economy* study (CBS, 2008). Existing employment and economic data often use overlapping combinations (*culture, creative, content, experience economy*), and especially more micro-level analysis is required. There is therefore an urgent requirement for useful and disaggregated ("bottom-up") data and knowledge on the city-region's creative industry firms, employment and structures, including their location, business development needs, and the production chains that operate between them and the wider economy. This evidence, when available, will highlight clusters on a geographic, sectoral and market basis and inform development planning and enterprise support measures.

### *Synergies between sectors*

4.28 There appears to be a lack of cross-disciplinary activity in the Copenhagen-area between arts and design on the one hand, and research, technology and other economic sectors on the other hand. The Danish government provided financial incentives and funding to promote the take up of design between 1997 and 2001, including support of the Danish Design Centre. These schemes have not continued, notwithstanding education, industry and public award and event programmes have continued, including INDEX, Design Centre programmes and the Centre for Research in Design (opened in 2004 at the School of Architecture Copenhagen establishing design programmes in university and art & design institutes).

4.29 How far the creative sector engages with the commercialisation of research is however not clear. This relates to where art & design education and vocational training are located and supported within higher education institutes and specialist institutions; how creative enterprises access and engage with the institutional innovation system and resources (such as licensing, legal expertise, R&D, prototyping); and how innovation spill-overs are identified and developed between what are large (private and public) and micro enterprises.

4.30 Many synergies could however be exploited. Examples elsewhere of cross-over applications between cultural and other growth sectors include “Arts & Health” (e.g. facility design, therapy) and technical or ‘smart’ textiles for use in health treatment and diagnostics. Considering the strong biotechnology and health cluster in the Copenhagen area, one would assume potential for synergies that could be reaped by further cooperation. A recent example is the collaboration between the Centre for IT & Architecture at the Royal Danish Academy of Fine Arts, and the Textiles Futures Research Centre at CSM, University of the Arts London, offering a joint 3 year international doctoral (PhD) studentship based in Copenhagen and London. This model might be expanded into other creative/convergent technology fields through collaborative university research and development, including creative firms and larger companies. This should foster and develop the synergies with established clusters in biotech/health, and between micro and larger firms and institutions/universities.

#### *Ethnic entrepreneurship*

4.31 The city could intensify its targeting of entrepreneurship policy towards immigrants. The resistance to grow from sole trader, micro enterprise and “lifestyle” business, and to take on employees, suggests a cultural constraint to entrepreneurship. This is one that could benefit from incentives (finance, training, employment) and other models of business growth, for example SME clusters/action groups, but also greater diversity in the business culture which might be best offered by international and migrant workers/groups. Access to employment, start-up and enterprise support may therefore be targeted at such groups, who may lack access to cultural and financial capital and the networks available to Danes. Ethnic entrepreneurship is a policy priority for the City of Copenhagen: from 2005 onwards outreach counselling has taken place in the business center run with the city of Frederiksberg. The Copenhagen Business service centre has continued the effort and focus on outreach counselling, ethnic woman and corporation with other authorities.

## **2.6 Critical issues in regional governance of entrepreneurship**

### *Coordination between levels of government*

4.32 The current system requires the essential coordination between Regional Centres of Growth and municipality. The split that is made between the responsibilities for high growth entrepreneurs (Regional Centres of Growth) and other entrepreneurs (municipalities) makes coordination between Regional Centres of Growth and municipalities essential when overlap is to be avoided. This would mean that organisations refer to the other organisation when the entrepreneur does not fit the target group and it would suggest consensus on what is the main point of entry for entrepreneurs. In practice, different models are being applied in different regions, depending on different regional and local circumstances. Due to a long history of strong local involvement in business services, the service provision of municipalities and the Regional Centre of Growth of Mid-Jutland is strongly aligned and coordinated (Box 9). This is however not everywhere the case in Denmark.

**Box 9. Business services in Mid-Jutland**

Denmark consists of several islands and mainland. Copenhagen is located on one of the islands (Sjælland). Mainland Denmark is called Jutland. There are three regions in Jutland; Mid-Jutland is one of them. It is a region that consists of 19 municipalities, the largest of which is Århus which is the second most populated city after Copenhagen. Mid-Jutland contains a population of 1.2 million people; this is around 22% of the overall population of Denmark. Around 3,000 new companies are created per year in Mid-Jutland, a quarter of which in Århus. Several middle-sized cities, such as Silkeborg, Herning, Viborg and Horsens take up a considerable share of business start ups in Mid-Jutland. Around 4% of the entrepreneurs in Mid-Jutland are growth entrepreneurs. The objective for 2015 is to have 8% growth entrepreneurs.

The Regional Centre of Growth of Mid-Jutland is located in Århus and in Herning; in both cities its office is within a science park. It has 22 employees in Århus and 14 employees in Herning. The centre has co-operation agreements with local business centres in each municipality and with several other private and public actors, such as science parks, innovation networks, venture capital funds, universities and research institutes. The Mid-Jutland centre deals directly with individual entrepreneurs: it provides information, mediation, coaching, training, networks and is active in programs and projects to support business activity. These are projects to increase regional innovation development, competence development and technological innovation development. Some of these projects are co-funded by EU Structural Funds. Some of the basic services for entrepreneurs are free; the more intensive programs are up to 50% financed by the centre. One of the most popular services used by SMEs is the program "Manager for hire", that provides a form of interim-management for entrepreneurs. SMEs have the right to make use of this program during 200 to 400 hours; maximum support provided is € 53 per hour).

Entrepreneurs have their first contact in principle with the local business centre in their municipality. There is one telephone number for business services that connects through automatically to the local centre. These local centres provide information, basic screening and refer the most ambitious and potential growth entrepreneurs to the Mid-Jutland centre. There is a large variety in local business services: municipalities such as Ikast and Randers have up to 10 employees for these services, whereas Odder municipality has only one employee. Two municipalities in Mid-Jutland do not have local business services; these are the municipalities of Samsø and Struer. The largest municipality in Mid-Jutland, the city of Århus, does not have its own local business centre. It is the Regional Centre of Growth in Mid-Jutland that provides the local business services for Århus.

Business services in municipality and in the Regional Centre of Growth are aligned. This is in part due to a financial mechanism: municipalities are paid by the centre for every growth entrepreneur that they refer to them. This has stimulated a cooperative mentality and the sharing of information. The coordination between municipalities and Centre of Growth is expressed in written agreements. Local business centres are more strongly developed in Mid-Jutland than in several municipalities in the Capital Region; mainly because over several years there was no evident urban core where most of the employment was created (as was the case in Copenhagen, which made abstaining from business service provision an option for several sub-urban municipalities in the Copenhagen area). As the Mid-Jutland Centre of Growth provides the local business services for Århus, there is not the risk (as in Copenhagen) that rivalry between organisations will lead to overlap or intransparency for entrepreneurs.

4.33 This coordination seems currently to be less developed in metropolitan Copenhagen notwithstanding some coordination meetings are organised between both actors. Both the Business Link Greater Copenhagen Area and Copenhagen Business Centre appear to have the ambition to be the main entry point for entrepreneurs. The Business Link Greater Copenhagen Area currently seems to be the actual entry point for most questions (hotline function) and refers entrepreneurs to the Copenhagen Business Centre if necessary; it is not clear whether this happens to the same extent the other way around. The Copenhagen Centre is clearly building up expertise in the areas it considers priorities for the city (ethnic and cultural entrepreneurship) and would – understandably – be tempted to keep clients in these areas even if they have clear high growth perspectives. As both the Business Link Greater Copenhagen Area and the Copenhagen Business Centre are new organisations, their functions vis-à-vis each other have not become completely clear yet. They seem to some extent be competing for similar clients, but their relatively limited capacity might give them an incentive to refer to each other the clients that they consider less interesting or promising.

4.34 Currently not much functional overlap seems to exist in practice between the Business Link Greater Copenhagen Area and the Copenhagen Business centre; their specialisations could in the future create some kind of an institutional equilibrium, but this is not an automatic process. In a sense, the institutional setting is too new to be able to give a fair judgement on the delivery of business services. As long as functional coordination between the two organisations has not been made explicit, it will however remain unclear to entrepreneurs which organisation is responsible for which tasks. This lack of coordination is not helped by the fact that Copenhagen as largest municipality in Denmark is not represented in the board of the Business Link Greater Copenhagen Area. Another source of coordination challenges might be the use of sectoral expertise that will be built up elsewhere in Denmark. Since several economic sectors in Copenhagen are also present in other regions, it would make sense to find mechanisms for knowledge sharing that goes across regional boundaries.

4.35 Apart from the Capital Region, which does not cover the functional area of the greater metropolitan area of Copenhagen, there is currently no institution providing horizontal cooperation in the metropolitan area of Copenhagen. It is difficult to see how the region could provide this metropolitan coordination. The task of regions that comes closest to regional coordination is in regional economic development coordination via the Regional Growth Forums. These forums play a role in articulating regional needs and policy directions. Business, education and regional government are represented and coordination with municipal governments in the region takes place. Considering the lack of instruments in fields that are instrumental to regional development, Regional Growth Forums *do ex ante* not seem to have enough leverage for the coordination of many different and sometimes conflicting interests in the Copenhagen area.

4.36 A vehicle for coordination could be the letters of agreement between regional growth house and municipality. These letters currently express which organisation is responsible for which target groups. As such their coverage is marginal and they do not give much guidance about grey areas or a common understanding on priorities for the area concerned. These letters of agreement might be used as a vehicle of coordination between regional growth house and municipality: the process leading up to the agreement could inform the regional growth house about different local contexts and specificities that could be expressed in its over all goals and targets; considering that future contracts between national government and regional growth houses could leave more room for regional differentiation for which the coordination process between regional growth house and municipality could provide input.

4.37 A current constraint in business services seems to be the fragmented demand vis-à-vis the consolidated private market for consulting and training. Demand-responsive service provision would imply that specialist services can be bought in on the private market for consulting and training, instead of wanting to offer everything in-house. Current demand is however too fragmented to be interesting for the private market. There might be a role for a public intermediary to coordinate the demand for certain specialised business services vis-à-vis the private sector. Depending on the size of the demand for these services this intermediary role could be taken up at the regional level or national level: at the regional level for those services for which enough effective demand exists at the regional level, at the national level for those specific services for which demand is relatively limited and geographically spread out.

#### *Coherence of policies*

4.38 The Centre of Growth-model is applied uniformly across the country, but it is in some respects less suitable for Copenhagen's specific situation. The contracts of the national government with the regional growth houses are similar for all five growth houses: they define the same target groups and the same performance criteria for every region that have the same weights in every region. Much of the knowledge-intensive and creative sectors are concentrated in Copenhagen for which employee growth is often not a measure of success. Many knowledge-intensive firms often grow in terms of turnover and

creative businesses often use networks and sub-contractors, rather than employing new staff. As one of the criteria in the performance contract of the national government with the Regional Centres of Growth is the increase of start ups with high employee growth, the Regional Centre of Growth of the Capital Region has an incentive to target types of entrepreneurs that are not necessarily the groups of entrepreneurs the city of Copenhagen wants to target. As Copenhagen currently witnesses labour shortages, one would suppose that there is less need in the Capital Region to focus too strongly on start ups with strong employee growth.

4.39 It is questionable that Copenhagen's priority of cultural entrepreneurship is shared by the other municipalities in its surrounding. In a survey of Danish municipal cultural policy rationales, only 18% identified 'economic development' as the primary aim of their culture-led strategies for regeneration (versus social development), and fewer Copenhagen municipalities prioritised economic development compared with other regions such as Aarhus (Bayliss 2004). The policy of Copenhagen appears to be at odds with the local level in terms of culture-led regeneration and creative enterprise. Consistency across levels of government is however important as creative clusters have regional spillovers (Box 10).

**Box 10. Regional spillovers of creative clusters**

Economically the scale of clusters are seen as important since it is at the wider region that innovative production and R&D clusters operate most successfully and competitive advantage can be sustained, rather than at the inner city or capital region levels alone. For example, London's global role as creative (industries) and culture city is maintained with the support of regional clusters outside of the capital region. Whilst the creative economy slowed down in the early 2000s in London, the creative economy actually grew in the surrounding South East region which also serves as the prime labour market/travel to work area, market catchment and production base. Examples include film & TV (studios), manufacturing and overspill workspace. It is also in this region (*Thames Gateway*) with improved connection to the Continent (CTRL) that housing growth areas are located. This city-region hub and spoke and polycentric creative and production cluster is also a feature of creative cities such as Berlin (Brandenburg), Milan (Lombardy, Emilia Regiano), Paris (Ile de France), San Francisco/Oakland, Scotland (6 cities) and Greater Amsterdam region.

*Incentives for entrepreneurship policies*

4.40 Denmark has an equalisation scheme that compensates municipalities with a low tax base and high costs relative to the average municipality in Denmark. A municipality whose estimated expenditure is larger than the estimated tax receipts receives an equalisation subsidy which is 58% of the difference between the expenditure and the estimated tax revenues. Conversely, if the receipts are higher than estimated expenditures 58% of the difference has to be paid in equalisation contribution. Funding for the equalisation system, above the contribution stipulated, is provided by the central government. The estimation of revenues and expenditures is done at the Ministry of Social Welfare. For the estimation of the tax revenues, the municipal tax base is used applying an average tax rate. The expenditure estimations are made using a complex of two different indicators: demographic ones and socio-economic factors, which makes it possible to take the different exogenous factors that influence local expenditures into account. There are also special subsidy schemes directed at especially poor municipalities and municipalities on islands.

4.41 In addition to this, an inter-municipal equalisation system in the Greater Copenhagen area exists. This is a purely inter-municipal system and no central government subsidies are allotted. A municipality in the area whose expenditures is larger than the estimated tax receipts receives a subsidy which is 27% of the difference between the expenditures and the tax receipts. Conversely a municipality with a surplus shall contribute 27% to the equalisation scheme. The definitions of expenditure and tax receipts are the same as in the national scheme, although weights of the different socio-economic indexes are different.

4.42 This intergovernmental transfer system may lead to important incentive distortions with an impact on entrepreneurship policies. For a group of municipalities, any attempt to increase the tax base before transfers leads to virtually no effect on the tax base after transfers. This would indicate a sizeable incentive problem for these municipalities (Schmidt 2008). As most of the additional revenues from increasing the tax base would be transferred away via the equalisation scheme, municipalities will not have an incentive to attract more economic activity or stimulate business development.

4.43 This is especially the case for wealthy municipalities in the Copenhagen area with relatively low costs, which might see 85% of their differences between revenues and needed expenditure transferred away via the national (57%) and the inter-municipal scheme (28%). The recently introduced equalisation on corporate tax bases only intensifies this incentive problem. This disincentive does not seem to be a theoretical construct. All the 11 municipalities in the Capital Region that did not have a local business centre were net contributors in the equalisation scheme<sup>41</sup>. Even when the group of municipalities that contribute into the equalisation scheme would be defined in its most limited sense, the correlation is striking: none of the eight largest contributors into the equalisation scheme (all eight municipalities happen to be in the Capital Region) had a local business centre.

#### *Future sustainability*

4.44 The funding of the Regional Centres of Growth after 2010 is still to be finally negotiated. There exist serious concerns connected to the devolvement of funding to municipalities after 2010. One possibility is that the block grant from the central government to municipalities would be increased with the amount that corresponds to the present level of funding for the centres. Based on the case study in the Copenhagen region, some caution has to be taken into account however. .

4.45 The City of Copenhagen has been investing in the development of a new business centre that is tailored to its policy priorities; so it might be less inclined to fund a Regional Centre of Growth that has different priorities while synergies between the two organisations may not be clear. Also other municipalities might have less incentive to fund the Regional Centre of Growth, more specifically the couple of municipalities that currently do not have a business centre. Business services seem to be relatively unimportant for them, or are taken care of by other municipalities. The interplay of actors is to some extent more intense in the Copenhagen area than in other regions, as the area is relatively more fragmented than other metropolitan areas in Denmark and has more areas that have a clear residential function and that have a limited interest in business services. A better view of the positive effects brought by the Regional Centre of Growth will probably increase the acceptance of municipalities. Although a bit early to measure the total effect of the Regional Centres, a planned evaluation in the beginning of 2009 will provide already some first indications. A thorough evaluation of the performance of the Regional Centres of Growth by 2010 before the end of the transition period is warranted.

### **3. Concluding remarks**

4.46 Entrepreneurship policies in Denmark have multi-level governance dimensions as not only the national government is a relevant actor in these policies, but also the sub-national governments (*i.e.* the regions and the municipalities). Moreover, national policies are also in part implemented by governance mechanisms that are organised along regional lines (the Centres of Growth); these de-concentrated structures territorially overlap with sub-national government.

<sup>41</sup> The City of Copenhagen, which benefitted from the equalisation scheme, being the notable exception. The City of Copenhagen however started up its business centre in 2008.

4.47 The case study on the multi-level government coordination in metropolitan Copenhagen shows that the objectives of the Business Link Greater Copenhagen Area and the Business Centre at the municipal level (City of Copenhagen) are potentially conflicting. This case study cannot deliver universal observations on multi-level government frameworks in Denmark; there are important regional differences as the practices in the region of Mid-Jutland clearly show. While the new business service structure is too recent to evaluate, the case study on Copenhagen shows that additional actions might have to be taken in order to realise the effective coordination between the different levels of government.

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## CHAPTER 5 : ENTREPRENEURSHIP POLICY IN DENMARK: AN ASSESSMENT

This chapter evaluates entrepreneurship policies in Denmark and formulates some policy recommendations. Potential bottlenecks are defined and policy issues are raised making room for improvement. The chapter focuses in particular on entrepreneurship education, venture capital, transfer of knowledge between research organisations and business and the delivery of public support services.

### 1. Large and rising importance of entrepreneurship policy

5.1 Entrepreneurship has traditionally been high on the policy agenda in Denmark. During the last 6 years, the Ministry of Economic and Business Affairs launched five action plans to strengthen the business environment for entrepreneurship. These different plans aimed to improve the framework conditions for entrepreneurship along different lines:

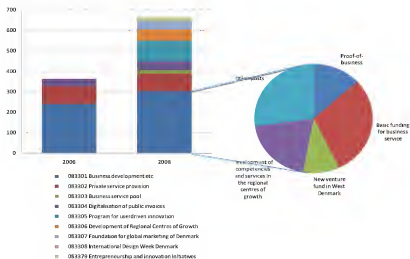
- The *Competitive Power Package* (2002) with a focus on growth, innovation and entrepreneurs, along 4 lines: structural adjustment and easing of the costs especially for SMEs, administrative reforms, entrepreneurs and generation change, and productivity and renewal.
- The *Action Plan for Entrepreneurs* (2003) improving the support and financing of entrepreneurs and stressing the importance of the educational system for entrepreneurship.
- *A Society with Room for the Free Initiative* (2003) with a focus on financing, education, taxation and support services along 5 principles: better economic basis for start-ups, the Open School, from client to heroes, the State as the guarantor for an open market, and Stop for unnecessary discrimination/
- The *Action Plan on Venture Capital* (2005) aimed at improving the supply side of venture capital to stimulate the availability of venture capital for start-ups and early stage entrepreneurs.
- The *Law on Promotion of Trade* (2005) establishing the Growth Council as consultative and coordinating body as well as the regional Growth Fora.

5.2 This large attention for entrepreneurship was recently further reinforced by the *Globalisation Strategy*, which sets out different policies for safeguarding Denmark's position in the global economy. The 350 initiatives of this strategy envisage major reforms, among other in education, R&D, entrepreneurship, as well as substantial improvements in the (framework) conditions for growth and productivity. As a result, entrepreneurship policy has become more integrated with other policy domains that have major impacts on entrepreneurial determinants and performance. In this context the integration between entrepreneurship and innovation policies merits particular attention (see below).

5.3 The specific objectives of the *Globalisation Strategy* are:

- **Denmark as a top performing entrepreneurial society:**
  - Denmark should continue to be among the European countries with the
  - largest number of business start-ups each year.
  - Denmark should be among the countries with the highest share of high growth start-ups.
- **Denmark as a top performing innovative society:**
  - Danish companies and public institutions should be top performers in innovation.
  - Competition in Denmark should be on a par with the leading OECD countries.
  - Denmark should be the world's most competitive society by 2015.
- **Denmark as a top performing knowledge society:**
  - Publicly financed expenditure on research and development should reach one per cent of gross domestic product (GDP) by 2010. Public and private companies and institutions should spend a total of at least 3 per cent of GDP pr. capita on research and development by 2010.
  - Research should be innovative and its quality comparable to world top performers.
  - Denmark should be a top performer in turning research results into new technologies, processes, goods and services.
- **World top level education:**
  - Pupils in primary and lower secondary school should be top performers in reading, mathematics, science and English.
  - All young people should complete a general or vocational upper secondary education program.
  - At least 50 percent of young people should complete a higher education program.
  - Education and training programs should be of top quality at all levels.

5.4 In order to achieve these ambitious goals, the government has foreseen a significant budget for the *Globalisation Strategy* growing from EUR 46.6 million in 2007 to EUR 66.6 million in 2010. It is difficult to exactly calculate the budget for entrepreneurship policies given that entrepreneurship is typically spread over different ministries in addition to the specific budget of the *globalisation Strategy*. The post 'Business development' (post 0833) in the government budget, which covers most of the entrepreneurship policies, grew almost by 75% between 2006 and 2008 because of new funds attributed to the implementation of the *Globalisation Strategy* (Figure 47). While not all of these initiatives and according resources go exclusively to entrepreneurship policies, it is clear that the budget for entrepreneurship increased significantly (see chapter 3).

**Figure 47.** Government budget for entrepreneurship policies 2006 and 2008 (in million DKK)

Source: Danish Government, 2008

5.5 In addition to increasing the budget for entrepreneurship, the *globalisation Strategy* introduces a clear specialisation in entrepreneurship policies by focusing on growth entrepreneurs and especially high-growth start-ups as the target group. International comparisons have shown that Denmark has a smaller number of fast growing start ups and that this group of companies strongly contributes to aggregate growth. Being in a situation with relative low unemployment there seems to be a rationale for promoting especially innovative entrepreneurship boosting revenues and productivity.

5.6 The implementation of this policy is directly dependent on the good identification of these growth entrepreneurs which *ex-ante* is not straightforward<sup>42</sup>. The yearly contracts between the national government and the 5 Regional Centres of Growth explicitly stipulate deliverables in terms of growth entrepreneurs however only based on *ex-post* criteria. Hence next to the sufficient large supply of start-ups, there is a clear need for adequate expertise and experience in screening firms to grant access to the specialised advice and counseling of the Centres of Growth; in addition arrangements have been made to refer entrepreneurs with growth potential by other organisations.

5.7 While it is too early to evaluate its economic impacts as of today, it is clear that the comprehensiveness of the *Globalisation Strategy* is a major asset for the effectiveness of government policy. The explicit inclusion of different policy domains and their mutual interdependencies are necessary for being effective; especially the linkages between entrepreneurship and innovation policies merit attention (see below). Another important advantage of the *Globalisation Strategy* is its open, international orientation by acknowledging that a small country like Denmark has a lot to win in an increasing global

<sup>42</sup> 'Winners' and 'losers' are difficult to distinguish/impossible *ex ante* and 'picking the winners' (in terms of industries and firms) policies have proven to often result in undesirable outcomes.

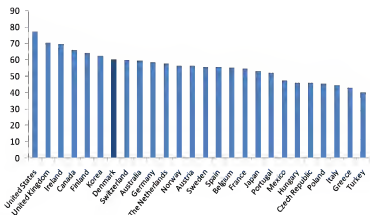
economy; this requires to formulation and implementation of appropriate measure to benefit maximally from *globalisation*.

5.8 While in the past (entrepreneurship) policy in Denmark was designed to improve the business environment for all companies, the *Globalisation Strategy* puts more focus on the specific category of high growth companies. The objective 'Denmark should be among the countries with the largest number of high growth start-ups' is implicitly based on the contribution of gazelles to aggregate growth (Birch, 1994). Notwithstanding firm age is a crucial factor (more important than firm size) for firm dynamics, recent work for the United States by Acs et al. (2008) shows that high potential firms (defined especially in revenue terms) are not necessarily gazelles; they found that the average age of this high potential group of firms was 25 years. All this suggests that a focused policy bears some risk as it might target the wrong group of companies since narrow criteria *ex-ante* defined may turn out to be too restrictive. Effective policies often call for a rather broad implementation unless the government has accurate information on the growth potential of individual firms. But the growth of firms can in general not be forecasted ahead of time; at least the thorough evaluation of the policy in the not so far future is necessary.

## 2. Overall good framework conditions for entrepreneurship

5.9 Entrepreneurship policy in Denmark has in the past successfully focused on getting the conditions for entrepreneurship right: overall the framework conditions for entrepreneurship can be evaluated as favourable in Denmark. Within the Entrepreneurship Index an aggregate indicator<sup>43</sup> has been developed ranking countries' entrepreneurship performance based on the measurement of individual indicators. This overall assessment indicates that entrepreneurship performance is rather positive: Denmark ranks seventh after the United States, the United Kingdom, Ireland, Canada, Finland and South Korea, but before most other European countries (Figure 48). In addition, Denmark has made efforts to develop a set of solid indicators together with the OECD and Eurostat, allowing tracking evolutions in the business environment and entrepreneurship over time.

<sup>43</sup> Based on a weighing where all policy areas are given equal weights; applying a robustness analysis shows that attaching different weights to individual indicators does not change the ranking of Denmark.

**Figure 48.** Ranking country entrepreneurship framework conditions, 2007

Note: The indicator shows the individual countries' average normalised performance in the most recent ranking of 66 indicators (Ahmad and Hoffmann framework)

Source: Entrepreneurship Index 2007, Danish Enterprise and Construction Authority

5.10 The comprehensiveness of Danish entrepreneurship policies is also acknowledged by other stakeholders. In its 2007 report IPREG highlighted that policies were covering several different sub-policy fields: promotion, education, administrative burdens, financing, business support and research. The same report also highlighted the mechanisms that Denmark instituted to assess and track the entrepreneurship climate in Denmark. In fact, the yearly Entrepreneurship Index analyses entrepreneurship performance and determinants based on the framework developed by Ahmad and Hoffmann (2008). This allows to benchmark the performance of Denmark internationally and to assess the progress of Denmark relative to top performing entrepreneurial countries.

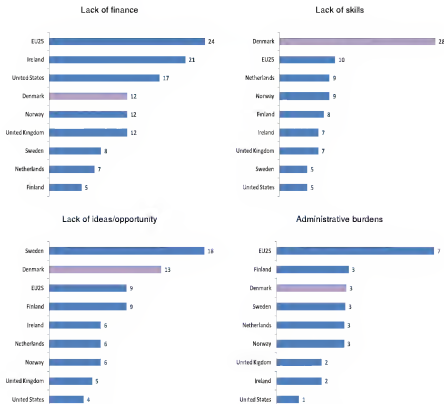
5.11 Chapter 2 has extensively discussed the different framework conditions for entrepreneurship. The analysis has shown that Denmark performs less well on entrepreneurial capabilities and human capital. The mobility of highly educated people seems smaller in Denmark and entrepreneurship receives less attention in the education system in Denmark, notwithstanding recent initiatives on entrepreneurship education. Access to finance and to R&D and technology are overall favorable, although some weaknesses exist linked to the relatively small size of the venture capital market and to the insufficient transfer of knowledge between research institutions and business.

5.12 These general conclusions come clearly through in the results of the 2007 European Union Entrepreneurship Survey (see chapter 2): the most important barriers for entrepreneurship are situated in the supply of skills and entrepreneurial capabilities<sup>44</sup>. In discussing entrepreneurial difficulties, 28% of the Danish respondents indicated that the lack of skills as a reason for not opting for entrepreneurship (Figure 49). Lack of finance and lack of business ideas/opportunities were mentioned less (respectively 12% and 13%). With these outcomes Denmark differs from other countries, as in the EU and the United States the

<sup>44</sup> Surveys should be interpreted with some caution as the underlying rationale behind the respondents' answers is not always clear.

lack of finance is mentioned as the most important impediment to entrepreneurship. This is also confirmed by the expert survey results of the Global Entrepreneurship Monitor (GEM).

**Figure 49.** Impediments to entrepreneurship



Source: EU – Flash Barometer (2007); Entrepreneurship Survey of the EU (25 Member States), United States, Iceland and Norway

5.13 Administrative burdens are not perceived as a major barrier to entrepreneurship in Denmark: only 3% of the Danish respondents saw this as an impediment to entrepreneurship<sup>45</sup>. This is in line with the positive rankings of Denmark on the ‘Doing Business’ indicators of the World Bank and more broadly with the analysis of chapter 2. The introduction of AMWAB (Activity Measurement of a Company’s Administrative Burden) has made the time spent on administrative formalities more transparent for companies (IPREG, 2007). In addition, the government increasingly uses IT in its interaction with companies (e.g. [www.virk.dk](http://www.virk.dk), [www.startguiden.dk](http://www.startguiden.dk)).

<sup>45</sup>

It should be noted that a lot of the respondents cited also ‘other’ reasons for not becoming entrepreneur (57% for Denmark), but no additional information is available.

5.14 Within the regulatory framework, the tax system and its impact on entrepreneurship is a specific sub-policy domain that merits further attention. Denmark is like the other Nordic countries, a well developed welfare society build upon heavy taxation and a large public sector. However, the relatively high (marginal) tax levels impede not only the attraction of human capital from abroad, but also result in an unfavorable reward-risk balance compared to other countries (see Box 11).

#### Box 11. Taxation and entrepreneurship

The OECD (2001) discussed taxation and entrepreneurship by analysing the tax system and specific provisions for self-employed individuals and smaller firms. It was found that that existing tax systems -- which reflect incomplete integration of personal and corporate taxes -- could be biased against small firms:

- Double taxation of dividends can create incentives for individuals to remain self-employed rather than incorporating small firms.
- Double taxation of corporate profits and the deductibility of interest payments can create distortions in favour of debt financing over equity financing, putting start-ups at a disadvantage since they have limited access to bank loans and depend largely on equity financing.
- Double taxation of distributed profits can create distortions in favour of retention rather than distribution of earnings, which may limit the reallocation of funds from mature firms to start-ups.

An overly progressive *income (personal) tax* structure penalises successful entrepreneurs and may discourage risk-taking and entrepreneurial investments. Studies generally find that lower personal income taxes can increase self-employment. Self-employed individuals who are start up a business are subject to personal income tax while their reinvested earnings in the firm are subject to capital gains tax. Further on, it seems not only the level of tax rates, but also the tax structure may influence the behaviour of potential entrepreneurs. In general, flatter structures may induce higher self-employment.

*Capital gains tax* also affects the supply of entrepreneurial talent and of capital to start-ups. A substantial part of self-employed income may be reinvested in the firm and subject to capital gains tax rather than personal income tax at a later date. Moreover, the demand for entrepreneurs or alternatively the supply of capital to start-ups is potentially determined by the relative tax treatment of capital gains that investors (in particular, angel investors) might be able to receive, compared to after-tax returns they might expect from alternative investments such as receiving dividends by investing in larger firms. Five general features of capital gains tax can discourage risk taking activities:

- high taxes on capital gains earned by entrepreneurs or angel investors may reduce the incentive to take on risks;
- the absence of deductibility of non-capital or capital losses from other sources of income imposes higher effective tax rates on risky investments.
- most tax systems allow capital losses to be applied against future capital gains at zero implicit interest rates, i.e. the gains are fully shared by governments but not the losses.
- stock options -- which are often used by small enterprises as a strategy for attracting and retaining employees -- are often treated unfavourably in tax systems, thereby discouraging their use.
- taxes on realised capital gains may create an incentive for asset holders to delay the sale of appreciated assets. This may tie up valuable assets which could have been used in a more productive manner by small firms.

*Taxes on transfers of wealth or estates* also play an important role for entrepreneurship. Firstly, entrepreneurs typically face liquidity constraints in forming new businesses, and they often rely on inheritance as a source of capital. Therefore, estate taxes which reduce the size of inheritance may lower entrepreneurial activity. Secondly, high estate tax liabilities may make it difficult for family businesses to survive the death of their founders.

Source: OECD (2001), Taxation, SMEs and Entrepreneurship

5.15 In what follows, the effects of government initiatives in the areas of entrepreneurship education, venture capital, access to R&D and technology, and the organisation of business services will be discussed in more detail in order to identify room for further improvement.

### 3. Entrepreneurial capabilities and human capital: strengthening entrepreneurship education

5.16 Entrepreneurship education is important as crucial determinant of the supply of entrepreneurship by forming (potential) entrepreneurs as well as contributing to a positive entrepreneurship culture. In this respect, entrepreneurship education should not only focus on narrow defined tools (e.g. how to start up a business, financial and human resources management) but also to broader attitudes (like creativity, risk-taking, etc.) especially on the lower and secondary level. A lot of OECD countries have paid a lot of attention to entrepreneurship education in recent years (see Box 12)

#### Box 12. The focus on entrepreneurship education in Norway since 2004

Norway has placed entrepreneurial education at the center of its recent entrepreneurship policies. In 2004 the government launched a national Strategy for Entrepreneurship in Education. The government put forward several new and concrete initiatives designed to promote education and training for entrepreneurship. The purpose of the strategy is to profile entrepreneurship as an educational objective and training strategy. The strategy is very comprehensive and addresses the entire educational system from primary school to college and university and also includes teacher training. It was developed in cooperation between the three ministries: the Ministry of Education and Research, the Ministry of Trade and Industry and the Ministry of Regional Development and Local Government. An inter-ministerial reference group allows collaboration between the different ministries and the follow-up of the strategy.

The strategy was revised in 2006, to focus further on the support to organisations and other stakeholders promoting entrepreneurship education. It motivates educational institutions, municipalities and country municipalities to establish training in entrepreneurship in close collaboration with trade and industry and other stakeholders of the local environment (e.g. local business and the social sector).

In the context of its strategic plan, the Norwegian Government supports "Junior Achievement - Young Enterprise Norway" (JA-YE). JA-YE, established in 1997, is the largest private supplier of entrepreneurship training in Norway and supports government efforts to increase the supply and quality of entrepreneurial education. It has a national administration and local branches in all counties. It provides training and teacher training at all stages of education. In the year 2005/2006, 12 000 pupils took part in 1 900 enterprises in 300 upper secondary schools. The Ministry of Trade and Industry, the Ministry of Local Government and Regional Development and the Ministry of Education and Research allocated NOK 16.8 million to the organisation in 2007. Junior Achievement - Young Enterprise Norway is also being financed by several county municipalities.

Specific measures have been introduced for the education and training of "ethnic entrepreneurs". The concept of "Introductory Enterprises" has been launched where immigrants can develop their abilities in entrepreneurship under expert guidance. It has been modulated on the JA-YE concept. Currently six pilot projects have been launched in six different municipalities.

Source: OECD (2008), *Fostering entrepreneurship for innovation* (forthcoming).

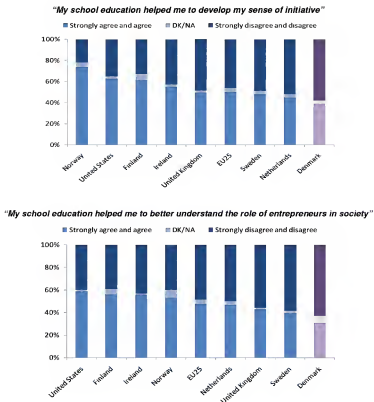
5.17 The analysis in chapter 2 has indicated that entrepreneurship receives less attention in the Danish education system relative to the top performing countries in entrepreneurship. In the OECD ranking of country performance in terms of promoting entrepreneurship education in primary and secondary schools, Denmark is ranked close to the OECD average. Also in higher education institutions, entrepreneurship education could be developed further (see chapter 2).

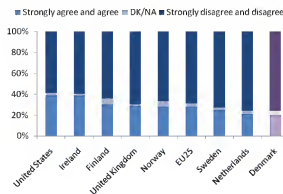
5.18 The survey results of the above mentioned 2007 Entrepreneurship Survey seem to indicate that the Danish education is not really stimulating students to become entrepreneurs, nor it helps understand the role of entrepreneurs in society. The survey set out to determine the extent to which the educational



systems in different countries are preparing its citizens to be entrepreneurs. On the three relevant questions “My school education helped me to develop my sense of initiative - a sort of entrepreneurial attitude”, “My school education helped me to better understand the role of entrepreneurs in society” and “My school education made me interested to become an entrepreneur”, Denmark scored very low in the international survey; much lower than other European countries (Figure 50). It should be noted however that the population surveyed consists of adults and that the results may therefore not reflect the perception of the young generation.

**Figure 50.** The role of entrepreneurship education



*"My school education made me interested to become an entrepreneur"*

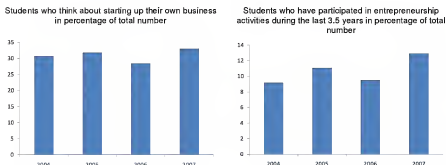
Source: EU – Flash Barometer (2007): Entrepreneurship Survey of the EU (25 Member States), United States, Iceland and Norway

5.19 The Danish government has launched several initiatives in recent years. On the primary and secondary levels, the launch of the Danish Foundation for Entrepreneurship Activities and Culture in 2004 has resulted in a growing number of students and teachers in entrepreneurship programs through the organisation of Young Enterprise, Gazelle Games and Company Programme (see chapter 3).

5.20 New initiatives in higher education are the International Danish Entrepreneurship Academy (IDEA), the Øresund Entrepreneurship Academy (OEA) and the student growth houses in the different institutions (see chapter 2). The total impact of these efforts to promote entrepreneurship education is somewhat difficult to assess given the newness of these initiatives. Nevertheless some first results for higher education are presented in the Entrepreneurship Barometer: every year since 2003 more than 4000 students have been asked about their opinion about starting businesses, and about how and if the university teaches entrepreneurship<sup>46</sup>.

5.21 The results from the Entrepreneurship Barometer show that the level of students engaged in entrepreneurship activities show an upward trend in the last four years. The share of students who are thinking about starting their own business is on the other hand more stable according to the entrepreneurship barometer (Figure 51).

<sup>46</sup> The Ministry uses the Entrepreneurship Barometer to nominate the Entrepreneurship University of the year, a prize given by the Minister of Science, Technology and Innovation.

**Figure 51.** Students and entrepreneurship

Source: Universiteternes Iværksætterbarometer 2007

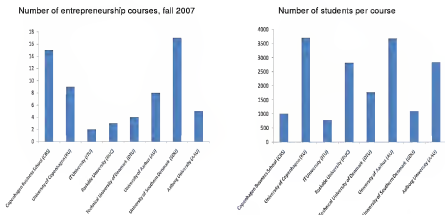
5.22 The Oeresund Entrepreneurship Academy has developed a method for categorising courses on entrepreneurship, which is used to determine the number of entrepreneurship related courses offered on the 8 Danish universities in the autumn semester 2007. The results indicate that the courses related to entrepreneurship as well as the number of students participating in these courses is increasing, which can be probably explained by the financial support to entrepreneurship courses from the OEA in the Oresund region and by IDEA in the rest of the country. Figure 52 presents the distribution of the courses and students per course across the different universities and shows there are large differences between universities.

5.23 Comparing the number of courses with the number of students participating in these courses shows on average an entrepreneurship course per 2,033 students. On the basis of these findings, it has been estimated that approximately 3 to 5 percent of all students at Danish universities sit-in in an entrepreneurship course during their studies. Numbers from leading international universities (e.g. in the United States) show an average of 10 to 20 percent.

5.24 It is clear that policies would benefit from additional evidence measuring the effects of new initiatives in entrepreneurship education. The present results of the Entrepreneurship Barometer and Oresund Entrepreneurship Academy only cover some of the intended results.

5.25 Another topic that should merit further attention is the coordination between the different initiatives. The responsibilities for the different initiatives in entrepreneurship education are shared between two ministries, which may endanger the necessary coordination especially if one decides to leverage the existing activities. The lesser performance in entrepreneurship education in Denmark calls for more financial resources but this may render the current structure dominated by rather small organisations less effective.

5.26 In addition, the existing initiatives in the field of entrepreneurship education seem to somewhat overlap, although the co-ordination and co-operation between the organisations seem to work well in practice. The Danish Foundation for Entrepreneurship Activities and Culture has a strong focus on primary schools, upper secondary school and short and medium cycle education programmes, while IDEA covers long-cycle tertiary education and the Oeresund Entrepreneurship Academy works specifically with the Oeresund universities. In addition, the Danish Foundation for Entrepreneurship Activities and Culture has co-financed several IDEA projects.

**Figure 52.** Entrepreneurship education in universities

Note: The number of students per course refers to the number of courses divided by the number of students at the respective universities

Source: Kortlægning af iværksætter- og entrepreneurship-kurser ved de 8 danske universiteter efterårssemesteret 2007.

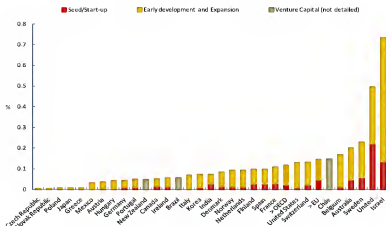
#### 4. Access to finance: further professionalising the venture capital market

5.27 The different actions plans for entrepreneurship have launched several initiatives to improve the supply of finance and especially venture capital. As discussed in Chapter 2, the access to finance can be assessed as favorable and overall financial resources for entrepreneurial firms in Denmark are available. Nevertheless the venture capital market in Denmark remains relatively limited and heavily government-dependent, and some bottlenecks exist for specific categories of companies, especially companies with expansion plans.

5.28 In percentage of its GDP, Denmark has a smaller venture capital market than other countries which seems related to especially due to smaller investments in seed and start-up capital (Figure 53). The pre-seed and seed stages are particularly dependent on public funding with only very few private investors present. Denmark has a relatively high inflow of foreign venture capital, which is typically invested in later stage companies.

Figure 53. Early stage and expansion investments

As a percentage of GDP, 2006



Note: Venture Capital includes Seed, Start-up, Early development and Expansion stages. Later stages and Buyouts are excluded, except for Mexico, Chile and Brazil. Total OECD excludes Luxembourg, Turkey and Iceland.

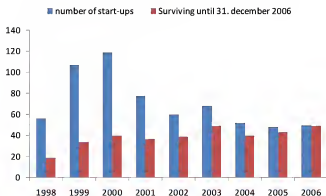
Source: OECD based on data from Thomson Financial, PwC, EVCA, LVCA and National Venture Capital Associations

5.29 As a result of the different government initiatives over the years, public funding plays an important role in the Danish venture capital market. Most of the early programs (e.g. equity guarantees but loan guarantees are still available) have been phased out and the policy support instruments have been concentrated in the *Vækstfonden* (see Chapters 2 and 3 for discussion). The Innovation Incubators, which were expected to be self-financing by 2004, remain dependent on the Ministry of Science Technology and Innovation's "Incubator Program" with an annual budget of DKK 127 million (see also Chapter 3).

5.30 In the period 1998-2006 the government has allocated around DDK 1 billion to the Innovation Incubators. In the same period the innovation incubators have helped their portfolio companies attracting private capital for more than DKK 2.5 billion<sup>47</sup>. The success of the innovation incubators in attracting private capital to their portfolio companies have increased considerably in recent years. In 2005 and 2006 the innovation incubators attracted private capital amounting to approximately DKK 600 million per year and the preliminary figures for 2007 show that approximately DKK 900 million have been attracted in private capital. In 2005-2007 innovation incubators the innovation incubators have thus been able to attract investments from private capital to their portfolio companies to a degree where private investments outnumber public investments by more than 6:1.

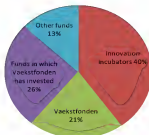
5.31 In 1998-2006 the government invested in 638 start-ups, of which 350 still existed at the end of 2006. By the end of 2006 there were around 260 companies in the portfolios of the Innovation Incubators and 30% of the public funds invested since 2002 had been returned (Figure 54).

<sup>47</sup> The investments are of course not evenly distributed: In 2006, 16 enterprises attracted DKK 450 out of the 600 million of private capital attracted (*Vækstfonden* 2008).

**Figure 54.** Start-up companies supported by Innovation Incubators

Source: Performanceregnskab for innovationsmiljøerne 2008

5.32 In 2006, *Vækstfonden* invested DDK 309 million, representing around 12% of the venture capital investments in Denmark. In addition, *Vækstfonden*'s share of the funds co-invested with private investors amounted to 110 million DDK. As such, *Vækstfonden* was responsible for around 17% of the investments made by Danish venture capitalists and the capital under administration by *Vækstfonden* accounted for 21% of the total funds administrated by the Danish venture funds. The dominating role of public money is especially clear in the market for seed-finance, where the public investments through *Vækstfonden* and the Innovation Incubators account for more than 61% of the investments (Figure 55).

**Figure 55.** Different actors share of Seed-investments in Danish enterprises in 2006

Source: Vækstfonden (2007)

5.33 Both governments 'instruments' seem to be coherent as the Innovation Incubators are a major source of capital investments for *Vækstfonden*. About a third of the venture capital investments of *Vækstfonden* in 2007 were made in companies supported by the *Innovation Incubators*. Together with its investment partners, *Vækstfonden* invested around DDK 1.4 billion in companies that have been started

with the support of the *Innovation Incubators*. The investments by the Innovation Incubators up to 1.5 million DDK is only sufficient for a limited number of innovative companies. The success of large public investments in seed-capital is then directly dependent on follow-up investments from by other funds, e. g. by *Vækstfonden*.

5.34 The venture capital market in Denmark has developed favorably during the last decade, resulting in a growing number of deals, a higher quality of investments and stronger players. The concentration of activities within the *Vækstfonden* and the alignment with other instruments like the Innovation Incubators have certainly made the venture capital more transparent for entrepreneurial companies looking for new/additional financial resources. Further on, notwithstanding the strong involvement of the public sector, the venture capital market in Denmark has become more professional over the years. Market based rules govern the venture capital market in Denmark; *Vækstfonden* e.g. acts as a private company and strictly invests on market conditions.

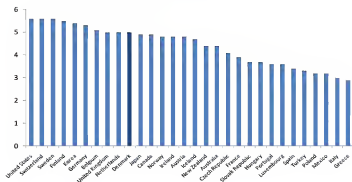
5.35 But just like in most other countries, this professionalisation trend also bears some risks. The involvement of the public sector in the venture capital market has traditionally been justified by the existence of market failure(s), as some companies did not find venture capital in the private market because they were too young/premature, too small or too risky. Professionalisation in the venture capital market goes together with higher rates on return on investments, often resulting in the moving up of venture capital providers including of public actors. Hence, some categories of firms in Denmark risk again to be left without venture capital. Early stage companies are often forced to look then for capital with relatives and or friends, but often lack the expertise investors may provide.

## **5. Access to R&D and technology: intensifying the knowledge transfer between research and business**

5.36 The broad analysis in Chapter 2 indicated that Denmark is performing relatively well on the access to R&D and technology, and especially smaller firms are found to deploy R&D activities in Denmark (more than in other countries). Nevertheless some important bottlenecks exist and especially the cooperation between research and business (particularly with smaller firms) is one of the major challenges that the Danish innovation policy faces. Just like in many other countries the results from research organisations and universities seem not sufficiently to flow to the business world. Business executives perceive the level of collaboration between companies and universities when conducting research and development as average in Denmark (Figure 56).

**Figure 56.** University/industry Research Collaboration, 2008

Survey indicator from 7 (intensive and ongoing) to 1 (non-existing)



Source: Global Competitiveness Report 2008

5.37 Just like in other countries (see Box 13), new initiatives have been implemented in order to improve this knowledge transfer: the Technology Transfer Act and the establishment of transfer offices in the different universities (see chapter 3). Also in the framework of the *Globalisation Strategy* and *InnovationDenmark* new initiatives have been launched recently like e.g. the proof-of concept initiative which assesses the commercial exploitation of public research inventions.

#### Box 13. An early focus on innovative firms in Korea

In Korea entrepreneurship policy has focused on promoting innovative start-ups and supporting industrial SMEs in upgrading their innovation potential since early 2000. Many programmes have aimed at easing access to finance for this set of innovative firms.

- The *Korea Small Business Innovation Research Programme* (KOSBIR) was introduced in 1998 to support the technological development of SMEs. Under this programme public institutes and central government agencies are to allocate 5% of their R&D budget to the technological development of SMEs.
- The *Inno-Biz Programme* was introduced in 2001 to better identify and foster innovative SMEs. Firms defined as innovative businesses are those which are equipped with superior technology and able to enhance their technological level through their own technological innovation system. The programme aims to help these SMEs grow and become well-established firms by providing them with technology guarantee and preferential treatment on credit loans. In 2006, around 7 000 SMEs were classified as "Inno-Biz".
- The *SME Technology Innovation Programme* introduced in 2001 funds SMEs capable of developing new technologies independently. These firms can recover 75% of their expenses linked to developing new products and enhancing product quality up to certain ceilings (USD 300 000 for two years in the case of strategic tasks; USD 100 000 for one year in case of general tasks). Over 1 900 SMEs benefitted from the programme in 2005.
- To allow innovative SMEs to locate their buildings in areas where access to finance, transports, communications and research are high, the government has provided incentives for private building companies to host innovative SMEs through exemptions from local taxes and expenses since 2001. In the context of the policy for a balanced regional development, a selection of areas were identified as "venture



promotion areas" and innovative SMEs were incited to move from the metropolitan area to regional clusters. There are currently 25 priority areas, 8 are situated in the metropolitan region while 17 are dispersed in other regions. A total of USD 144 million were raised by the central government and the local governments (on a one to one basis) to allow the creation of favourable business conditions in these identified areas. This has included the creation of business support centers. Between 2002 and 2006, the concentration level of SMEs has increased from 17% to 22%; the average sales have risen by 56% while the average employment has increased by 30%.

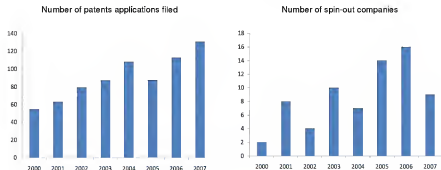
In 2004 a comprehensive programme (*Plan to restructure the national innovation system*) was launched to restructure the national innovation system. It aimed among other to: provide effective tax incentives to the business sector to boost R&D; foster 10 000 innovation-driven SMEs through technical and financial assistance, subsidy for employing R&D personnel and easing regulation on start-up companies.

More recent policy initiatives have strengthened networking activities, through an increased information exchange between business and research sectors, between large and small enterprises (2006 Act on Promoting Cooperation between Large companies and SMEs), through the creation of regional clusters (2005 Innovative Cluster City Policy).

Source: OECD (2006), *Fostering entrepreneurship for innovation* (forthcoming).

5.38 It is hard to evaluate the effectiveness of the long range of tech-transfer activities that has been initiated in the Danish Universities. However, survey data of the Danish Agency for Science, Technology and Innovation (DASTI) show that progress has been made. A clear upward trend since 2000 can be observed in the number of patent applications filed from 13 research organisations. In addition, the number of spinout companies (*i.e.* new enterprises based on a formal agreement transferring IP from the research institutions) has increased since 2000 (Figure 57).

Figure 57. Commercialisation of university research



Source: DASTI; Public Research Commercialisation Survey, 2007

5.39 More generally, the focus on high growth start-ups which are typically more productive and more innovative, calls for a clear coherence between innovation and entrepreneurship policies. Especially in a developed country like Denmark with low unemployment, high growth entrepreneurship will be often be based on strong innovativeness (technological and/or non-technological). As both are important drivers of economic growth, innovation and entrepreneurship policies share a lot of policy issues and challenges (Dahlstrand and Stevenson, 2007). Just like in other countries, innovation and entrepreneurship policies are the responsibility of (two) different ministries, which may make the coordination between the two policy fields complex.

5.40 Strong efforts have already been undertaken to ensure co-ordination and a clear division of labour; for example the clear division of labour between the Regional Centres of Growth and the innovation incubators. Likewise recent studies<sup>48</sup> document the co-operation and integrative approach of *Vækstfonden* and the Innovation Incubators in their efforts to create a cohesive system for ensuring risk capital for knowledge-based entrepreneurs. Furthermore, the broad inter-ministerial co-operation regarding a new business-oriented innovation strategy pays attention to this coordination.

5.41 Innovation policy in Denmark had in the past a strong research and technology orientation, focusing on universities, research organisation, public research, etc. In setting out the different objectives, the *Globalisation Strategy* has already resulted in some integration across for policy domains. This is further strengthened in the formulation of actions plans like e.g. *InnovationDenmark* with initiatives on increased transfer/interface between research and business. In addition, so-called non-technological (which is often linked to technological innovation) has got some attention, e.g. through program on user-driven innovation, however given the strong performance of Denmark on this in an international perspective this area might merit even more attention.

## 6. Business support services: optimising the public entrepreneurship infrastructure

5.42 During the last years major efforts have been made to create simple and unified government structures providing services for entrepreneurs. Also, the *Globalisation Strategy* and the corresponding action plans foresee a further concentration and streamlining of initiatives and government programs. This is beneficial for entrepreneurial companies as they often lack a complete overview of the different government initiatives and programmes and miss the time and resources to gather the knowledge.

5.43 Granting (right) access to the public entrepreneurship infrastructure can be organised in different ways. The 'one-stop-shop' principle with one access point for companies is very attractive when providing information on rules and regulation, e.g. tax matters and legal start-up. The portal [www.virk.dk](http://www.virk.dk) is a good example of how to grant a unique access to specific (government) information on the start-up and closing down of a company. However, the guidance on for instance growth and internationalisation issues is spread across several other sites, hence making it more difficult for (potential) entrepreneurs to find the necessary information.

5.44 For some support services, like counseling or advice for example, the so-called 'no wrong door' principle seems however to be a more realistic approach. This principle acknowledges that all knowledge is often not located in one place, hence needing some division of labor between different organisations. 'No wrong door' however implies that no matter where the entrepreneur approaches the system he/she should always be directed to the right place where the correct advice is located<sup>49</sup>. A prerequisite for this to work is that coordination between different instances is effective and that entrepreneurs are referred from one government service to the (exact) other. This however might not always be the case as extensively discussed in Chapter 4 for the Copenhagen Region.

5.45 The objective of increasing the number of growth start-ups is intrinsically linked to the creation of the Regional Centres of Growth as they are expected to offer specialised advice and counseling specifically for this target group of entrepreneurial companies with growth potential. Since the Regional Centres of Growth were only established in 2007, this new structure is too recent to be assessed. Effects will only materialise after some time, hence continuity is needed for the new structure to be well known for

<sup>48</sup> Vækstfonden (2008): *Venturekapital i Danmark: Fokus på aktører i seed-markedet*; Vækstfonden (2008): *Venture – Temamagasin 2/2008*

<sup>49</sup> In the case of websites, this means that the different sites for counseling and advice are linked to one another, allowing the entrepreneur to promptly find the needed information or interlocutor.

entrepreneurs and to have the measurable impact. As such, strong arguments can be formulated to keep the current structure in place. But the case study on the Copenhagen region (Chapter 4) has indicated that the objectives of the Regional Centres of Growth and the local business service do not always correspond. A streamlining of services especially in the Copenhagen region seems to be necessary.

5.46 It is clear that the planned transfer of the funding after 2010 merits the full attention of government. The current structure of the Regional Centres of Growth balances between uniformity at the one side and responsiveness to regional differences and the other side. The overall objective is to respect regional characteristics in a unified framework. Transferring the funding completely to municipalities after 2010 may leave too much to regional dynamics, with the risk that some of the Regional Centres of Growth will cease to exist and national targets will be more difficult to attain. A strong coordination and cooperation on the national level will then become necessary and it is not clear if existing organisations and bodies can take up this task.

5.47 Alternatively, the problem with a uniform approach imposed from above by the national level may lack credibility. Some Regional Centres of Growth have not (yet) build up a strong position especially in regions with strongly developed local business services. As such, governance equilibriums will differ between regions with different actors being the most important interface with entrepreneurs.

5.48 The discussion in Chapter 4 has indicated coordination between the different government levels as major critical issues for the efficient functioning of the public entrepreneurship infrastructure. As long as coordination between different government instances has not been made effective, entrepreneurs will face difficulties in identifying which organisation is responsible for which tasks. It is clear that the split that is made between the responsibilities for high growth entrepreneurs (Regional Centres of Growth) and other entrepreneurs (municipalities) complicates this. Coordination between Regional Centres of Growth and municipalities is essential when overlap is to be avoided; otherwise the 'no-wrong-door' principle will turn out to be ineffective in reality.

5.49 The activities of the Regional Centres of Growth focus merely on counselling and referring entrepreneurial companies to the right structures, including to the private sector. A critical mass is necessary and strong linkages with the private sector are important given its knowledge of business management and practices. However, private consulting companies tend to be less interested in advising a large number of smaller start-up companies and their services are often also more expensive. Framework agreements with advisors organisations (e.g. the national management council, the accountant association, etc.) are one way of organising this to the benefits of both entrepreneurs and different kinds of counsellors and advisors. Private advising companies could be integrated into existing programs (e.g. the Accelerator programs) and introduced to a group of interesting new companies who might become future customers.

5.50 The services offered by the public business centres (local and regional) might risk to create unfair competition and crowd out private initiatives. But given that the objective of the public service infrastructure is merely in counselling and referring companies to private and public organisation (cfr. target for the Regional Centres of Growth: 75% of the persons or enterprises counseled are referred either to private counsellors or public schemes), this risk seems to be rather limited. However in referring entrepreneurs to private counselling, open and transparent procedures have to be used in order to safeguard fair competition between private companies. It could be interesting to additionally measure the satisfaction of entrepreneurs with the received advice in order to better match the demand and the supply for specialised advice. It could be foreseen in the yearly contracts that the regional centres of growth implement some form of satisfaction surveys in order to improve their offered services over the years.

5.51 In offering advice to entrepreneurs, especially the field of innovation and internationalisation merit large attention, since high growth entrepreneurship in Denmark is expected to be heavily driven by

the innovativeness and/or internationalisation of the entrepreneurial firm. The Gazelle Growth program seems to combine both elements in screening the firms applying for this program. Several initiatives exist and it could be beneficial to analyse how these existing programs can be aligned and improved, e.g. for targeting new growth markets like China and India.

## 7. Concluding remarks

5.52 Entrepreneurship policies have received a lot of attention already for quite some years in Denmark. Until now entrepreneurship policy was merely focused in getting the framework conditions for entrepreneurship right for all firms. Entrepreneurship policy today in Denmark shows a large comprehensiveness with different programs and initiatives implemented and developed over the years. Another strong asset of Danish entrepreneurship policy compared to other countries, is the regular monitoring and benchmarking of entrepreneurial performance and determinants internationally. As a result, overall entrepreneurship policy in Denmark can be evaluated as positive, having resulted in a healthy business environment and very conducive to entrepreneurial activity.

5.53 The *Globalisation Strategy* has set very ambitious goals for entrepreneurship and focuses especially on high growth (young) entrepreneurial firms as important contributors to economic growth, productivity and employment. Accordingly the funds and infrastructure available for the support of enterprises with high growth potential has increased substantially. The success of this more focused approach in entrepreneurship policy will directly depend on the good identification of growth entrepreneurs; there are some studies that suggest that a definition too narrowly based on firm age, risk to target a too small group of high potential entrepreneurial firms.

5.54 Notwithstanding the overall favourable business environment for entrepreneurship in Denmark, some elements merit further attention of government. The major area where framework conditions in Denmark work against entrepreneurial activity is the high and progressive level of taxation, which has a strong impact on the risk/reward trade-off, making starting and expanding a business less attractive to potential or existing entrepreneurs. It is expected that high taxes might especially be disincentive to growing entrepreneurs, which is in direct contrast with the ambitious objectives put forward in the *Globalisation Strategy*. But high (marginal) taxes are also important in attracting foreign skilled people while at the same time keeping hold of Danish highly skilled people. This category of human capital is especially important in developed countries like Denmark as the growth potential of firms is directly related to the innovativeness and internationalisation of their activities.

5.55 A second priority area for entrepreneurship policy in Denmark is entrepreneurship education on all levels of the educational system. Denmark performs comparatively less well in the supply of entrepreneurial skills and capabilities, and entrepreneurship receives less attention in the Danish education system relative to the top performing countries. This means that there is still scope to improve the training of potential entrepreneurs and the cultural attitude towards entrepreneurship. Different initiatives have been launched in recent years; some first indications of increased attention to entrepreneurship in education have already become apparent. However, most of the funding for the existing programs runs until 2008. The government has set down an inter-ministerial working group to make a new coherent strategy for entrepreneurship education that takes in all levels of the educational system. The funding of a new initiative will be based on the recommendations of this group. It seems that there is a need for a continuation of entrepreneurship programs of some scale in this domain if Denmark wants to reach the level of the best performing countries. In the future a thorough evaluation is warranted on the induced effects of policy programs.

5.56 Denmark performs relatively better in other policy sub-domains of entrepreneurship, but there is still room for improvement. The venture capital markets remains relatively small and is heavily dependent

on government funds especially in pre-seed and seed investments, the transfer of technology between the research and the business sector is relatively limited and some administrative requirements may undergo further policy evaluation. A continuous assessment of the entrepreneurship performance of Denmark is necessary in order to monitor the (policy) entrepreneurship trends in other countries and to adapt Danish policies to the changing character of the global economy.

5.57 An important challenge for Denmark is the coordination and integration of different policies affecting entrepreneurship. The description of the different entrepreneurship policies and programs has illustrated the responsibilities of different ministries. Within the *Globalisation Strategy* objectives for different policy domains are put forward, thereby acknowledging the mutual interdependence of these policy sub-domains. In a context of low unemployment, the focus on high growth start-ups which are more productive and innovative calls for a clear coherence between innovation and entrepreneurship policies. Therefore it is both positive and noteworthy that strong efforts have been undertaken from the relevant ministries to ensure co-ordination and a clear division of labour.

5.58 Denmark may face potential bottlenecks linked to the multi-level governance dimension of entrepreneurship policies. There is a risk that the recently de-concentrated structures (Regional Centres of Growth) may territorially overlap with the role played by sub-national governments. This calls for increased coordination between the different levels of government in the implementation of entrepreneurship policies and programmes.

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